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TREATISE

ON

OPIUM,

FOUNDED UPON

PRACTICAL OBSERVATIONS.

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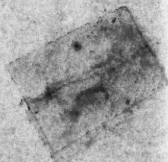
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THE BRITISH

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THE
P R E F A C E.

AFTER I had finished the following sheets, I shewed them to a friend, who was of opinion, that a treatise, wherein opium is recommended in such a variety of cases, might be of bad consequence in the hands of the ignorant and unexperienced, unless some more positive cautions and particular directions

were given for the use of such readers.

But, though I am convinced of the truth of my friend's observation, I know not well how to remedy this evil. To lay aside the pen, and write nothing about it, will not mend the matter, for opium has already got into the hands of every pretender to practice, and is prescribed every day, not only by many charitable and well-meaning ladies, but even by the too officious and ignorant nurses ; so that we must either assist the unskilful by our experience, or they will proceed boldly without us. If ships will go to sea daily, where many of them are lost, we ought to study to improve the art
of

of navigation, and point out the rocks, the shallows, and other dangers to be avoided; and, I hardly think, that a new book upon so useful a subject would increase the danger of sailing.

I doubt not but this treatise may occasion some fatal blunders, thro' the inadvertency and ignorance of such presumptuous pretenders to skill in physick; but, that I may prevent such mischiefs as much as I can, I here give it as my sincere opinion, after more than 30 years uninterrupted practice, that opium is a poison by which great numbers are daily destroyed; not, indeed, by such doses as kill suddenly, for that happens very seldom, but by its being given unseasonably

sonably in such diseases and to such constitutions for which it is not proper. Every body knows that a large dose of laudanum will kill, and, therefore, they need not be cautioned on that head; but there are few who consider it as a slow poison, though it certainly is so, when improperly given. Here it is, that cautions are necessary, and the rather, because its operation is sometimes so slow and gradual, that the true cause of the patient's death is not suspected, even by the prescriber himself, who, therefore, persists in this fatal error.

The danger of opium, as a slow poison, flows often from two sources, which I will just mention here:

One

One of them is, that it is often the best palliative, and gives present ease, even in diseases, which it either confirms or increases: by this temporary relief, we are often decoyed into mistakes about its effects, and, indeed, it is no great wonder.

I remember the case of one in the beginning of a fever, who told me she should be well if I could procure her one night's rest: I gave opium, and she lay quiet that night; her friends were pleased with the success, and I continued it, 'till symptoms of danger made us take advice of one of more skill and much more experience than I had had at that time; 'twas he, who first gave me the hint, which my latter experience hath al-

ways confirmed, viz. that opium may seem very beneficial in cases where it does real hurt, especially in latent and slow fevers.

Another considerable source of the mischiefs done by this drug, is, the commonly received notion, that opium should be given at any time, when watching or pain is excessive; I am so much of the contrary opinion, that, with me, it is almost a rule not to give it when either of the two is immoderate, e. g. I never give it in obstinate deliriums, a *phrenitis*, *pleuritis*, violent gouts, rheumatism, or great inflammations of any kind, whether from internal or external causes, such as contusions, fractures, and dislocations, for it frequently in-
creases

creases those symptoms which it was intended to abate ; and if it happens to force some disturbed slumbers, they prove more intolerable than the watching, and are commonly succeeded by a greater excess of pain. I hope this caution will be of use to such as think opium serves only to abate pain and procure sleep, without considering when it is that it increases the cause of the pain.

I own, there are some exceptions from this last rule, but I forbear to mention them, because they would involve me in distinctions too minute for any unexperienced reader.

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If these additional cautions may
be of service in preventing some
of the mischief done by the indis-
creet use of laudanum, I shall ob-
tain the end of writing this preface.

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ERRATA.

P. 16. l. 1. read juices. P. 91. l. 17. for
plethora, read *pleura*. P. 94. l. 18. for inordinate,
read moderate. P. 96. l. 4, for when omit it,
read when they omit it.

A
TREATISE
ON
OPIUM.

INTRODUCTION.

THE writers on any particular part of the materia medica, have generally thought themselves obliged, not only to relate all they know of the subject from their own experience, but likewise all they have read, or heard of it from others. They never fail to tell how, and in what places it is produced; in what manner it is prepared, improved, corrected, analysed, &c. Yet it seems of as little consequence to a

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practical physician, to know how opium, or indeed any exotic, is propagated, prepared, or refined; as it is for us to be acquainted with the arts of refining sugar, or making chocolate cakes, before we sit down to breakfast. A systematic writer thinks himself obliged to exhaust every subject that he takes in hand; the consequence of which is, that as no man has time, talents, or opportunities sufficient to examine into all that may be thought necessary himself, he must oft-times collect and repeat what has been said already by other authors.

But as a knowledge of the virtues and use of medicines is of most importance to the practice of physic, I shall confine myself chiefly to what my own experience has taught me of the use of opium, and refer the reader to such as have treated the *materia medica* at large for the other particulars relating to it.

So great and valuable are the effects of opium in curing diseases, that the study of its virtues deserves our singular application and attention: and I have preferred it before all the other drugs for my present subject, not
only

only on that account, but because at the same time that it is of such important use in regular practice, yet, in unskilful hands, it is often attended with very fatal consequences; of which the reader will meet with many instances in the following sheets.

I propose, First, to enquire into the different methods that have been employed to investigate the virtues of opium.

Secondly, To consider what are the effects of sleep, both when it is natural, and when it is brought on by opium; and to shew the analogy betwixt them. And,

Thirdly, To enumerate the diseases wherein I have most experienced its effects, whether good or bad.

SECTION I

Of the methods that have been used to investigate the virtues of opium.

IN order to discover the medical virtues and properties of opium, a great variety of experiments have been thought of and tried. Some have examined it by a chemical analysis; others have either mixed it with the blood newly drawn, or have injected liquid laudanum into the veins of living animals; a third sort of writers have formed conjectures of its properties from its smell and taste; whilst others have tried it upon their patients, and confined their observations to its effects in the cure of diseases.

As to the first way of discovering the virtues of opium, viz. by a chemical analysis, we find that Geoffroy has tried that method of examination, both in this and the other simples; and from thence concluded, that the soporific quality of opium was owing to its sulphur: but he does not tell us by what means he discovered, that it was this principle which made it soporific; nor that ever he
made

made an experiment of this sulphur of opium upon any one patient.

Writers in chemistry are too apt to lead young students into an opinion, that the virtues of drugs are discoverable by chemical processes. They insensibly blend what they learn in the practice of physic, with what they learn by the chemical operations; and by joining the two together, the Tyro is induced to think that chemistry will teach us, *a priori*, that mercury will salivate, senna purge, and ipecacoean vomit, tho' nothing is further from the truth,

The medicinal virtues of drugs are their effects in the human body, and not in a retort, or still. It is therefore from the practice of physic, and not from chemistry, that we must expect to be acquainted with them. And indeed we may with as much propriety think of analysing the load-stone, to discover its effects on iron, as expect to find out the soporific quality of opium by any chemical process.

The next method of inquiring into the virtues of opium, as well as other medicines, is that of mixing them with the blood newly
 B 3 drawn

drawn from the arm. The authors of this seem to think, that whatever effects opium has upon the blood when out of the veins, it must necessarily have the same after it has entered the subclavian, by the way of the stomach and intestines. But they seem not to consider, that the blood, whilst in the course of the circulation, is perpetually getting and losing something, every inch it moves, by means of the secretions carried on in every part of the body; that it is never half a minute the same liquor; and that from the first moment we take in our aliment at the mouth, till it is spent on the reparation, or other purposes of the machine, these uninterrupted changes in it are so necessary, that without them the most innocent food would become noxious. Thus, e. gr. new cow's milk, injected into the veins of a dog, proves a mortal poison.

Blood in a tea-cup is no more like what it was, whilst it made a part of the animal, than an amputated leg; so that you may as reasonably expect that cantharides, or opium, will affect it in the same manner before as after its separation, as think, by experiments with
 opium

opium or other drugs on the blood newly drawn, to find out their medicinal properties.

Another way of investigating the virtues of drugs, is by injecting them into the veins of living animals; but this method has been sufficiently tried without success. If milk injected into the veins should prove a poison, would it follow, that it must as certainly kill when taken at the mouth? On the other hand, tho' transfusing the blood of one animal into the veins of another, so far succeeded as to cure diseases, we must not thence infer, that blood swallowed down into the stomach would have the same effect; for when taken at the mouth, and undergoing all the changes of our food, it must be very different from what is received by transfusion. It is certainly by no means a light diet; bull's blood is much harder to digest than their flesh: and we are told by some writers, that criminals among the antients were condemned to drink it as a poison.

Tho' transfusions of the blood of one live animal directly into the veins of another, has been attended with success in curing some

diseases, it will not follow, that any other liquor in nature will succeed the same way.

New milk, for example, tho' an animal liquor, and tho' just separated from the blood, yet is so far from being safe when injected into the veins directly, that it has often had fatal effects when, after being formed in the breasts, it has been again absorbed into the mass of blood.

As to those who judge of the virtues of medicines by their smell and taste, I must own, that those senses may give us information as to some of their qualities, and consequently afford such hints as will serve to suggest other useful experiments. It is the smell and taste that inform most other animals what is, and what is not their proper food; but we have not so perfect an use of these sensations, much less can we thereby know the virtues of medicines. We could not from hence predict the effects of *argentum vivum*, *calomel*, *vitrum antimonii* and its infusions; we could not know that opium causes sleep, and eases pain; or that an ague may be cured by the bark,

Most

Most of the writers on the *materia medica* pretend to give us some account of the virtues of drugs, deduced from practical observations; and are not sparing in producing the testimony of other authors; but how little satisfaction do we find in reading their accounts! How much are we disappointed when we come to compare these observations with our own experience! Nor is this so much to be wondered at, when we reflect, that no man by his own practice can acquire a sufficient knowledge of the virtues of one tenth part of the simples in use: life is too short for so great a work; therefore all the writers of the *materia medica* must copy from others nine tenths of what they give us on this subject: for which reason, should they all agree that elks-hoof, for example, or the *cranium humanum* are good cephalics, yet you may reasonably suspect, that an hundred such authorities are in reality but one; especially when we find, that most of these writers copy *verbatim* from others.

It is extremely difficult to ascertain the medicinal properties of drugs, especially of those we commonly esteem alteratives; for
 the

the same individual medicine has different effects, not only on different constitutions, and in different diseases; but also in different stages of the same disease: nor will less uncertainty arise from a variation in the dose, and in the frequency of its repetition. In short, there are so many circumstances, to which we either do not, or perhaps cannot sufficiently attend, that vary their operation and effects, that we are daily disappointed in our expectations, even of those medicines with which we are best acquainted.

These difficulties are not a little increased by that absurd, tho' fashionable practice, of blending, in one compound, a farrago of all the simples which authors have classed together for that disease. How impossible is it for the prescriber to know which ingredient was useful, which unnecessary or hurtful? Yet some physicians not only seem to glory in this multiplicity of the ingredients, but put it still more absolutely out of their power to grow wiser from experience, by changing their prescriptions almost every time they visit the sick, as if a day or two was sufficient

to know the effects of an alterative. Add to this, that we are often deceived both by the patient and nurse. I have more than once been thus prejudiced in favour of a medicine which I found, at last, had never been taken. Yet I have much oftner been deceived by those prejudices which I imbibed very early, and which, in some degree, are unavoidable. In our first studies, (however great our natural abilities) we have little or no experience of our own, and must therefore rely on that of our teachers; and before we have gone through the several branches of science, we have usually swallowed so many creeds implicitly, that we cannot afterwards have time and opportunity to re-examine the tenth part of them, till our prejudices are so deeply rooted, that no room is left to doubt, or to make any further enquiries about them. Here and there a man of genius will get the better of many of those prejudices; but the far greater part of us are misled for life. In the practice of physic these prejudices are sometimes so strong, that when our prescriptions apparently do harm,
we

we are apt to ascribe it to the malignity of the disease; and, on the other hand, when nature or chance cures the patient, as is often the case, we very readily give all the praise to our art: not craftily, as some wits may surmise; but out of the pure simplicity of our hearts, and blindness of our understanding.

From what has been said we may conclude, that the medicinal qualities of drugs are not to be discovered either by chemical processes, or by mixing them with blood newly drawn from the veins, nor by injecting them into the blood-vessels of living animals, nor by the taste or smell: and that the only way of knowing what a medicine will do in a jaundice, e. gr. is by giving it to one that has that disease; and even this method will be attended with many and often insuperable difficulties: yet it is still not only the best, but almost the only means of discovering the *vires medicamentorum*.

I shall therefore pursue this method in my present enquiry into the virtues and use of opium, by shewing in what cases and circumstances

cumstances I have found it do good or harm; and from these facts I shall endeavour to deduce some general rules concerning its use, especially such as may be applicable to other drugs by a parity of reasoning.

SEC.

SECTION II.

Of the Effects of Sleep.

MOST of the effects of opium may, for ought we know, depend on its soporific quality: I suspect they do, and shall therefore, before we proceed, take a view of the *phænomena* and effects of sleep; which being known to every body, if they have a resemblance to those of opium, they will illustrate one another.

And first let us consider the common effects of sleep in health, and then compare them with those of opium, both in health, and likewise in several diseases.

Sleep makes us insensible of a moderate stimulus, and perhaps many of the *phænomena* attending it may be accounted for from this insensibility. Hence perhaps it is, that most of our excretions are abated or interrupted at that time; we neither cough, nor hawk, nor spit, nor sneeze, nor evacuate by stool or urine. It seems to be owing to this, that many of our secreted liquors, which tho' thin, when they arrive at the excretory ducts,

ducts, yet by the remora there, in our sleep, become thick; witness the wax in the ears, the mucus of our mouth, nose, fauces, and intestines: these are all thicker after a profound sleep, probably by lying till the aqueous parts are absorbed, or evaporated; and hence perhaps it is, that perspiration, which is excreted without any stimulus, proceeds fully as well in sleep as when awake; nay, probably better, on account of the other excretions being then lessened. That sleep occasions this remora, and thereby accumulates our serous juices, appears from a remarkable experiment, first published by Mr. Wasse, in the Philosophical Transactions, and afterwards farther prosecuted by M. de Fontenu*.

The experiment shews, that a man that uses much exercise the preceding day, if he is measured exactly at night, will be found very sensibly shorter than he will be next morning, after a good night's rest: the difference will often amount to an inch, and sometimes more.

This is accounted for by the cartilages of the spine being full and distended by the

* V. Hist. de l'Acad. R. des Sc. A. 1725.

uices which are accumulated in the night during sleep; whereas these same cartilages, by being compressed by exercise in the day-time, are emptied of those juices, which being restored in the morning, make them thicker and more elastic. By the same experiment we find, that simple rest, without any sleep, had more or less the same effect upon the increase of stature, as if the person had slept. And lastly it was observed, that as one quarter of an hour's exercise sensibly diminished the stature, so a full meal of good nourishment increased it as sensibly, and as suddenly, but it did not continue. Our liquids are likewise rarefied, and perhaps even our bones become larger. I wish the experiment had been tried after a full dose of opium.

Exercise both abates and increases swellings in the legs, by propelling the fluids: for, when the swellings of the legs are the effect of the weakness of the solids, then exercise does harm; but sometimes the vitiated fluids are the original cause, and then exercise does good: e. gr. after a fracture, a bruise, or a strain in the ankle, if the patient walk too soon, or too much, that exercise will infallibly

libly bring on a swelling, by propelling the fluids through those weak fibres with more force than they are able to bear. Many by this means lose their leg at last.

On the other hand, if the swelling is a symptom of a *chlorosis*, scurvy, or even a dropsy, a little exercise will often abate the swelling and stiffness of the legs, by propelling the inert and half-stagnating blood through its vessels. The patient finds his legs less stiff after a short walk, therefore he concludes, that the more he walks, the better; by which mistake, he continues his exercise till the weak fibres, by being overstrained, lose their tone, and the swelling is thereby much increased: so that exercise, according as it is used in a greater or less degree, abates or increases this swelling.

It is not improbable, that alternate rest and exercise, which so remarkably augment or diminish our vertebral cartilages, may, in the same manner, have much influence on our growth and strength; and that sleep, by the *remora* and accumulation of our juices, contributes to nutrition: whereas exercise may propel and evacuate what is useless or superfluous,

fluous, and thereby make room for what further accumulation may be necessary.

Hence we see, that, *ceteris paribus*, labouring people, especially at sea, grow faster and stronger than others, who have no exercise. The latter may become fat, but they do not grow firm and strong.

Again, we see all the symptoms of a *plethora* are consequent to a sound sleep, viz. A person who has slept too long, awakes with his eyes swelled and watery; if his eyes were tender before, the eye-lids are glewed together; if he is under a salivation, or at the *acme* of the small-pox, the *saliva* becomes thicker, and the chops are more swelled. Hence Sydenham observed, that opium raised and kept up the swelling of the face in the small-pox.

If sleep gives a remarkable *remora* to our serous excretions, it is not strange that the *saliva* should grow thick and swell the glands; and perhaps this *remora* in so many glands and excretory ducts, contributes to an universal distention and *plethora*.

If one is much disposed to go to stool over night, he can easily put it off till the next
morn-

morning, provided he can but delay it till he falls asleep; for then he is insensible of the *stimulus*, and in the mean time the *faces*, by rest, are thickened and rendered less stimulating, at least till they become either very hard, or are much accumulated.

Just at the time of falling asleep, we feel a *stupor* and heaviness over all the body. We have a feeling as if the parts were crammed and compressed. All these sensations go immediately off when we are suddenly waked; but when we are more gradually disturbed, they are not so soon removed. When we shake off drowsiness in a morning, it is as if we were throwing away so many weights and incumbrances. From these *phænomena*, it should seem, that our bodies are not only more plethoric, but even more obstructed in our sleep, than while awake. When we are half asleep, we feel ourselves inert; but when we are quite awake, there is an activity in every fibre.

Another effect of sleep is, that it promotes heat throughout the whole body. Look at a sleeping infant, and you will see the complexion remarkably florid, and the skin feels

hot, or else is moist with sweat; and it is deservedly reckoned a great defect of the *vis vitæ*, or natural ferment of the blood, if our feet continue cold all night.

I think hectic fits, sudden rarefactions of the blood, (especially in weak and watry constitutions) colliquative sweats in a consumption, cramps, the night-mare, asthmatic fits, venereal, pleuritic, and even labour-pains, are, *cæteris paribus*, more increased after sleep. I had once a spitting of blood that seized me every night in my sleep, with an heat over the whole body. This obliged me at last to sit up in a chair all night, to keep myself cool. Whilst awake, I was never troubled with this hæmorrhage.

If one sleeps after dinner, a glowing heat diffuses itself throughout the whole body. This practice is therefore of use to aged and cold constitutions, by promoting the natural ferment of their blood: for the same reason it does harm in full habits and hot constitutions.

Upon sleeping after dinner, I grow hot and high coloured, and my face appears swelled. If I am soon awaked, I feel a
con-

confusion attended with a sensation of a feverish kind ; but if I have not been disturbed too soon, I awake easy, without confusion, and in a breathing sweat, as if my dinner and sleep had brought on a short fever, ending in this moderate critical discharge. If I am roused out of my first sleep after a full supper, I feel my skin hot and dry, and my head confused.

I know, that as I am a valetudinarian, my patients are sometimes apprehensive that I may catch cold in the night air ; but at that time my blood is rarified, I am hot and dry, and catch no cold during that state. But if I am called out early in a morning, when the preceding heat has raised a sweat, I am very liable to catch cold. When I have not eaten a full supper, I am not so hot in the night, and sweat less the next morning.

This heat upon sleeping immediately after eating, may be ascribed by some to the new chyle getting into the blood ; yet if that was the cause, a man would find himself equally as hot upon using gentle exercise in the house after dinner, which is not agreeable to experience. But if the accumulation of our

juices in the vertebral cartilages be as sensible after sleep, or rest, or a good dinner, as the experiments of Mr. Wasse and Mr. de Fontenu seem to evince, I would extend my theory still further, and suppose that a like accumulation happens in most of the glands and capillary vessels; which, like other infarctions, will produce the heat, drought, and heaviness which we usually experience after a full meal.

It is as certain, on the other hand, that sleeping with an empty stomach warms much less than after a full meal; therefore all who complain of being too hot in the night, should go supperless to bed.

That sleep has different effects, accordingly as it happens upon a full or an empty stomach, is beyond dispute; but if any one doubts it, let him look at the face of a drunken man while he is asleep. Lommius has observed, *notum est, somno jejunum corpus consumi*. And Hippocrates has remarked the same thing, *somni jejunum attenuant, humidum quod inest vacuantes*. If, by way of conjecture, I may comment upon this passage, I would say, that from the time our food is swallowed, a process begins gradually to change it into
6 chyle,

chyle, then into blood, then to make it fit for secretion, for nutrition, and all the purposes of the machine. After this is done, as the same process goes on, tho' we receive no new nourishment, the body must be gradually drained by the usual excretions, &c.; but without that kind of ferment, which new chyle always occasions more or less, when it enters the blood: *i. e.* the animal process, by sleep concocts and perfects all our juices; after which, if there is no fresh supply, the same process wastes, dissolves, and renders them useless. Therefore sleep both wastes and repairs the body.

I need not mention what comfort a sound sleep affords to the wearied, and those whose spirits are exhausted; and how much they are invigorated and enlivened thereby. Every body knows, that sleep is so necessary in such cases, that we cannot be without it; nay, that we cannot supply its defect by the best nourishment or cordials, or by any degrees of rest either of body or mind: all are insufficient. One should think, that proper food and a good digestion would supply sufficient materials to recruit the spirits; but experience

shews, that sleep is also indispensibly necessary.

It seems requisite in carrying on the concoction and secretion of all the animal humours, and perhaps the spirits are also generated or perfected by sleep. It is very certain, that without sleep life cannot long be supported: we have no *succedaneum* to supply its place. When it fails us, we have no better resource than to endeavour, by all proper methods, to restore and promote it; and there are many things conducive to this end.

A full meal will often make us sleepy, and that immediately after eating: a sound but plethoric constitution disposes to sleep: silence and repose; with a freedom from every sensation of *stimulus*, are no less effectual in producing it.

Moderate fatigue wastes those fluids which rest and sleep restore; so that exercise is a predisposing cause of sleep, in like manner as fasting gives an appetite and requires a recruit of food.

In order to know what hinders sleep, we need but invert the causes that promote it: thus

thus for instance, as a full supper promotes it, fasting will prevent it; and so of the rest.

Sleep is likewise impeded by every kind of *stimulus* of the senses, or of the mind; *i. e.* whatever affects the mind either with pain or pleasure. A paucity of good juices have the same effect: And tho' moderate fatigue disposes to sleep, yet, when excessive, it often raises a fever, attended with watchfulness. But all these rules are general, and must be liable to many exceptions, from a variety of circumstances that will frequently occur, particularly in those of different ages and constitutions. And this last reflection (tho' too little attended to by most practical writers) is in no wise confined to the present case, it is no less applicable to every branch of practice; for we are too much accustomed to prescribe by general rules, whereas general rules alone can never be of much use in a science that is chiefly made up of exceptions from them.

I shall now sum up in a few words the effects of sleep. In our sleep we are insensible of a moderate *stimulus*, therefore those secretions and excretions which are promoted
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by any natural *stimulus* whilst we are awake, are retarded in our sleep.

Most of the serous humours grow thick if they stagnate, or lie long upon the parts, after their excretion: thus we find, that the *saliva* and *mucus* of the nose, mouth, and *fauces*, are found more viscid immediately after sleep than before it; and that after we have been some time awake, these liquors become loose and are easily discharged.

In sleep the body is extended, the humours are accumulated and rarified, so as to occasion a kind of *plethora*. Hence a recruit of spirits, and an increase of strength towards the morning, which we begin to be sensible of even in our sleep, by our being engaged in pleasant dreams.

All the symptoms of a *plethora* are increased by sleep. Hence we may derive the night-mare, cramps, or spasms, starting suddenly out of our sleep in most of the inflammatory diseases, in the measles, small-pox, and rheumatic fevers; nay, asthmatic fits, pleuritic, venereal, and even labour-pains are often exasperated by sleep. An *hæmoptoe* comes oftner in the morning than at any other

other time of the day ; and the starting of an amputated stump is so remarkably the effect of sleep, that the patients are afraid to compose themselves to rest, lest they burst the tied vessels. These are all indications of fulness brought on by sleep.

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SECTION III.

The effects of opium and of sleep compared, including the author's observations on the use of opium in the catarrh.

I Have had occasion to feel many of the effects of opium upon myself, for I have all my life-time been very subject to a cough upon catching cold, which has frequently seized me when I was otherwise in perfect health. My common cure was opium, which usually had the following effects.

In the first place, it commonly made me sleep, which is its most constant effect, except in some particular constitutions; or where sleep is impeded by other causes, which was sometimes my own case: for one night a violent toothach, another a dismal piece of news, and a third night a short fever overbalanced the soporific quality of the opium, and hindered me from sleeping. These causes were evident, and such as every one would expect might prevent the opium from taking effect; but it is also certain, that there
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are many imperceptible causes, which hinder us from sleeping with such a dose as has been found abundantly soporific before : so that opium will not always make us sleep, even when there is no apparent cause to disturb us.

By a moderate dose, *i. e.* twenty drops of *liquid laudanum*, taken at bed-time, my cough was often cured the very next day, if mild and recent, and I was no otherwise indisposed : all the effects were sleeping better, and being cured.

But if I took thirty drops instead of twenty, then the next morning I found the drowsiness continue longer, my face being a little swelled, my skin hotter and sometimes drier, tho' at other times a gentle sweat came on; my tongue was whitish, and my breast bound, till the effects of the *laudanum* ceased. Thus I have often had my cough seemingly cured in the morning, by the *laudanum* which I took the preceding night ; but it returned in the afternoon, when the effect of the opium was over : yet opium was still the cure, which was indeed so often successful, and so suddenly, with many of my patients, that they remembered its virtues some years after
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and have told me that I had formerly cured them of a cough with one dose of a medicine that wrought like a charm.

I tried *laudanum* afterwards upon myself, when plethoric; and as the ordinary dose of twenty drops was too small, I took thirty, which made me hoarse: and tho' my cough was indeed kept quiet, and became less frequent the next day by this means; yet I felt my breast so bound and stiff thereby, that I was afraid to cough, and breathed with difficulty till after I had spit some blood. This made me lay aside my favourite medicine, and endeavour to restore a free cough by bleeding and abstinence, and the use of *sperma ceti* and honey.

This experiment on myself may have been useful to my patients, since I had too hastily adopted opium as a general cure for a catarrh.

I remember likewise, that being seized with an incessant dry cough, like that of the measles, which kind of cough then raged at Edinburgh, and concluding it to be one of the catarrhus kind, I took forty drops of *laudanum* on the first or second night, which stopped the cough in an hour; but brought

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on a great hoarseness, with a noise in my ears, and a giddiness and confusion of my head. I fell asleep, but soon waked again, with violent startings and confusion, attended with a sense of faintness or failing about the heart, that seized me as often as I was dropping asleep. To expel the opium I immediately took a vomit of white vitriol; and when that was over I slept well the rest of the night, and was well next morning; but on the evening following, I began to feel the effects of the large dose of *laudanum*, by losing almost all the sense of feeling in my legs: and tho' I continued perfectly free from the cough, yet I was soon after seized with a spasmodic asthma, accompanied with many other nervous symptoms. I blooded twice for it, by which means, and the use of an hyssop-julep, I recovered.

This is a strong instance of the power of opium in a catarrh; but at the same time is a caution not to give it in large doses. Perhaps that rheum which in this epidemic catarrh fell usually from the lungs, or *trachea*, by means of the *laudanum*, was returned into the vessels, so as to affect
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the whole *genus nervosum*; for when liquors once excreted, are re-absorbed into the blood, what are they not capable of producing? Surely, very different effects; for they will sometimes kill, and at other times be assimilated, or expelled, if the *vis vitæ* is vigorous. Thus the gout suddenly repelled, proves often fatal to old men.

From those effects, produced by different doses of opium, we see that it infallibly, more or less, thickens all the liquors in the mouth, nose, and *trachea*; the body becomes costive, the tongue parched, and the urine higher coloured than usual; every ferous secretion is retarded, thickened, or diminished, except perspiration. Hence an accumulation and rarefaction of the humours, and the body is sensibly made more plethoric.

All these symptoms attending the use of opium, are likewise the effects of natural sleep; tho' perhaps in a less degree, and consequently less perceptible.

SECTION IV.

Of the Effects of opium in a diarrhoea and vomiting.

I Shall now proceed to enumerate the effects of opium in other diseases besides the catarrh; and first in a *diarrhoea* and vomiting, proceeding from acrid humours in the bowels; for which, in my own case, I have used opium successfully.

I am apt to be griped with the use of honey, shell-fish, or vinegar; but a *diarrhoea* always succeeds, by which I have very often been extremely fatigued, and therefore obliged to have recourse to opium, which frequently cured me in a few hours. It seemed to abate the present *stimulus* till the acrimony was corrected; tho' sometimes that was not accomplished before the strength of the opium was spent, and then the gripes returned; but I was commonly cured without a second dose.

It is more than probable, that this acrimony may on some occasions be too copious,

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or too acrid to be so soon corrected, or it may be too great to be subdued by the chylipoetic *viscera*. It may be such, that if it be not expelled, it would become fatal by its perpetual *stimulus*. I remember I once indulged my palate, at a collation, to a degree that it brought on a *cholera morbus*. The wine turned sour upon my stomach, and in a few hours the vomiting and purging was excessive.

I thought myself in very great danger, and immediately took thirty drops of *laudanum*, which stopped my vomiting for some time; but made me so excessively sick, that I wished heartily for its return. A draught of warm water produced the effect I desired; the vomiting and purging both returned, and continued with such violence, that I thought myself again at death's door. I now judged (as is common in cases of extremity) that the present evil was the greatest; and therefore repeated the same dose of *laudanum*, thinking the first had been mostly thrown up again. This abated the evacuations, and gave me some disturbed rest, in which I moaned much. In about two hours I waked extremely

tremely sick, and vomited, whereby I was greatly relieved, and thought myself almost well; but the sickness still returning, I took a vomit of ipecacoana. I had a pain in my head, and a quick pulse, and therefore thought it safest to evacuate the cause now, whilst I was able to bear the operation of an emetic. After this I fell asleep, and was much better; which I took to be a sign, that the cause was either corrected or expelled.

By what passed I could easily see the truth of that maxim, *viz.* That the acrimony in the *primæ viæ* may be such in quantity or quality, as must be expelled, and cannot be corrected. Had I increased the dose of *laudanum*, so as to hinder all evacuation at the beginning, it must have been such a dose as would have destroyed all sensation; it must have made me apoplectic, before it could have rendered the intestines quite insensible of such a *stimulus*. On the other hand, the *stimulus* may be so great, and the evacuation so violent, that nature may be overcome, convulsions may be brought on, and death ensue. Opium abates the vomiting for a time, and gives some respite, till the increas-

ing sickness renews the attack: for no dose of opium, that can safely be given, will prevent this sickness, or the return of the *stimulus*. However, it is not easy to determine in what dose it would prove mortal in a case of this nature; because while we have such contents in the *primæ viæ* and intestines, most of it would be again discharged, before it could get into the blood. I have given much opium in this disease, without being sensible of any effect, till I had reason to think all the acrimony was evacuated: but I confess that my experience in my own case has hindered me from using it so freely as otherwise I might have done; besides, the acrid contents are so evidently the cause of the disease, that their expulsion is the principal indication. And I think it certain, when a large dose of opium creates great sickness, that it is a sign there is still something noxious within. Upon the whole, I think opium should be very rarely given in this disease, and that after washing the stomach and intestines with plenty of warm water and chalk: at least it should not be given in such doses as quite to suppress the evacuations,

tions, whilst the acrid matter remains unexpelled.

When the debauch which brings on the disease is very slight, or when the acrimony is little, a single dose of opium, without a vomit, will often cure the gripes and looseness, by abating the *stimulus* till nature has corrected or expelled it; but a timely vomit is the safest way to prevent the crude juices entering the blood, and raising a fever.

Besides the *cholera morbus* above described, there are other kinds and causes of looseness, which require no small judgment in the use of opium.

Some gluttons have an habitual looseness, because they lay in such a load every day as must prove purgative, on account of the large contents of their guts, independent of any acrimony: some constitutions are so strong, as to continue to expel this load every day, for half a life-time. A few copious loose stools every morning is a very sensible relief to them, and this keeps them in health.

I remember one who had gormandized twenty years: he called a physician, and told him that he was of late grown weak,

and had no appetite for meat ; yet notwithstanding had a frequent looseness. The doctor knew not that he took in a load of small beer and brandy every day, that kept up a constant purging ; he therefore ordered him as much tincture of *laudanum* and *diascordium*, as soon convinced him, that a looseness was necessary, and that an habitual cramming required an habitual evacuation.

Yet it is certain, that many men of good sense never attend to this rule : but we should never neglect to examine both the quantity and quality of our patient's diet, before we prescribe for a looseness ; for to stop a purging with *laudanum* in one that is continually surfeited with meat or drink, is an absurdity no physician of any abilities can be capable of.

Some children are crammed every day by their fond mothers with variety of jellies, sweet-meats, and preserves. To those, when their digestion is quite spoiled, we often add many stomachic boluses and draughts ; and all this betwixt their meals, at which they are never stinted. A constant looseness is the usual effect : in which case, if the mother

conceals the confects and restoratives from the knowledge of the doctor, he will be too apt to prescribe *diascordium* or *laudanum*, when chalk and water, with a spare diet, would be much more proper. Thus the child grows gradually more pale, thin, and lax: the mother blames the looseness alone, and will have it stopped; more opium and white decoctions are prescribed by the physician, and more restoratives by the mother: which the child being still less able to digest, the looseness is renewed thereby as often as it is abated by the medicines; till some new disease is brought on, or the physician discovers the mismanagement of the mother, and corrects it.

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SECTION V.

Of the effects of opium in the diarrhœa, attending the weaning-illness of infants.

THE weaning-illness of infants is often attended with a *diarrhœa*, which is probably owing to their change of diet from breast-milk to spoon-meat: the best way of preventing it is, to accustom the children, for some months before their weaning, to such diet as differs least from breast-milk, and to wean them gradually. But if notwithstanding a looseness comes on, four or five drops of liquid *laudanum*, with the absorbent powders, given every night in any convenient form, will seldom fail, unless after eating too much; for an opiate always disagrees with a plentiful meal.

It is common to give to children the syrup of white poppies instead of opium, because the mother apprehends less danger from a syrup which she knows, than from a drug, which, as she has been told, proves sometimes fatal by an error in the dose. We are certain, that both of them procure sleep; and that by pro-

proportionally increasing the dose, their effects will be equally dangerous ; but whether an ounce of this syrup, or a grain of solid opium, have any different effects in different diseases and different constitutions, is not so easy to determine : I must confess, that the difference (if any there be) has been hitherto to me imperceptible. I once thought, that the syrup was not so apt to give disturbed rest as the opium ; and therefore, that it was more friendly to the *genus nervosum*, till I found, from a great number of cases, that they both would produce good or bad effects, according as circumstances differed. I found the same opiate would to one person afford a calm and refreshing sleep, which to another gave broken slumbers, with frequent startings and frightful dreams. Even the same dose of syrup of poppies, or of opium, upon the same person in different circumstances, will be no less different in its effects : so that he that prefers the one to the other upon his own experience, ought to do it with diffidence ; for it would require very diligent and accurate attention to balance all those concomitant circumstances which render the effects

fects of opium so various. The whole lifetime of a man of little practice would be hardly sufficient to make the necessary experiments; and an eminent physician has neither time nor patience to pursue such enquiries.

But to return to the subject from whence I have digressed: I observed, that small doses of opium are of great use in that *diarrhœa* which attends the weaning illness of infants; and yet if it is over-dosed, or given with too plentiful a diet, it will make the child sick, and the looseness will soon return.

I imagine that it relieves by abating the *stimulus* in the intestines, till nature and absorbents have destroyed the acrimony; at least the child is daily recruited with sleep, which could not have been procured without opium: but even in the present case, if the acrimony is either copious or violent, forget not to abate it before the use of opium. Some indeed prescribe rhubarb to be often repeated for that purpose; but absorbents, even in the beginning, seem preferable to either rhubarb or ipecacoana, because they ease the child's gripes sooner than a stimulating me-

medicine; and it is as easy to destroy the acrimony by absorbents, as to remove it by evacuants. I must own, that in cases where the acrid contents are copious, one vomit, or one dose of rhubarb, may be very proper; but I would not delay the prescribing of the absorbents for the sake of the rhubarb, but give both the same day.

Children are likewise troubled with a *diarrhæa* at the time of cutting their teeth; and the same symptoms of acrimony in the *primæ viæ* attend this case as in the last. Opium is alike useful in both complaints, when given with the same precautions. There are many skilful practitioners, who do not use opium in the above diseases: neither would I urge the use of it in mild cases, but where the gripes hinder the child's rest; and even then I would never give it without absorbents, which may properly be considered as the radical cure.

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SECTION VI.

Of the effects of opium in the diarrhoea attending the rickets and scrophula.

WEAKLY and ricketty children, or such as are come of scrophulous parents, continue often in good health for the first, second, or third years of their life; after which, the latent scrophulous leaven begins to shew itself, and, among other symptoms, commonly brings on a *diarrhœa*, attended often with a big belly, and signs of the rickets.

There is another set of children brought up in the country by the farmers servants, whose diet is sour butter-milk and oatmeal; at least it is so among the poorer sort: and such children have a pale or yellowish complexion, a big belly, and unweildy habit of body. This disease is often attended with a looseness; but it is evidently the effects of cramming them with heavy diet, at a time when they use no exercise to digest it: for as soon as they are grown older, and are able to

to drive the plough, their exercise proves an effectual cure. Now it is almost certain, that a good diet in small quantities would cure such children, whilst opium would be rather hurtful. But altho' I do not use it in this last case, yet in the *diarrhœa* of scrophulous children, where I cannot so much blame their diet, as the morbid state of the humours, I give four, five, or six drops of liquid *laudanum* every night at bed-time, chiefly if they complain of pains in the belly and want of rest. I cannot say whether it operates purely as a pacific, or whether small doses act as a cordial, by which the motion of the fluids is assisted; but I think, in fact, they are better for it. I would advise giving the *liquid laudanum* at least an hour after supper: but if the diet of the child be not properly regulated, you will not be sensible of the effects.

When some weakly children of the above class were almost killed with cold bathing, being so weak, that they continued cold and chill to a great degree, and for a long time, after they came out of the bath; (for a glowing heat should always succeed, otherwise it brings on or increases a looseness) I forbade
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the bathing, and prescribed with good success some aromatic confections, with a small proportion of steel ; and *liquid laudanum* at night.

Tho' I doubt not but that cold bathing has been often very useful to weak and rickety children ; yet some are often too weak for such a shock as the cold bath must give to the whole machine.

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SECTION VII.

The effects of opium in a dysentery.

OPIUM is often very beneficial in the dysentery, but much oftener hurtful.

In this disease we always find a great acrimony, a very foetid smell, and a mucous consistence in the stools, mixed with blood. The *stimulus* is abated for a time by opium; but soon returns with more violence, as long as the acrimony continues. In a mild dysentery, where the acrimony is little, that little is sometimes corrected, and the disease is cured by opium: but if the acrimony is great and copious, it cannot be corrected; and in that case opium does harm, especially if the patient is plethoric. It retains and accumulates the putrid *fæces*, and though the patient may slumber a little, and be at ease for a moment, he is afterwards more sick and more oppressed than before: for my own part, when I reflect how commonly opium is used in this disease, without any caution, I suspect its effects are too often fatal, tho'

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we ascribe our want of success to the malignity of the disease.

I have seen a dysenteric patient void such a quantity of viscid *mucus*, and adhering together in such a manner, that he was very much alarmed at the appearance, imagining it had been one of his guts that was come away. Before it was expelled, he had a perpetual uninterrupted inclination to go to stool; and when it was passed, it was found extremely foetid. In this case the *stimulus* was so great, that opium could not abate it; and if this putrid *mucus* could have been kept in, it would probably soon have proved mortal.

When one in a dysentery is plethoric, if his stools are very foetid, viscid, and in small quantities, opium will certainly increase the disorder, and bring on great sickness and oppression; and in dangerous cases, if it be given every night at the beginning of the disease, it will probably hasten death. I know, that when the pain is very urgent, both the patient and physician are apt to fly to opium for present relief; but while they abate the present sensation of pain, they are increasing the *stimulus* by detaining and accumulating

cumulating the putrefied contents of the bowels: and indeed I have held it as a rule, that opium is then most improper when the patient calls for it with the greatest importunity; *i. e.* when the excessive putrefaction and acrimony stimulate most constantly and violently. But when nature is not able to bear the incessant *stimulus* and evacuations, it may be necessary to have recourse to opium, to procure an abatement of the symptoms and some intervals of ease.

Whenever purgatives do good in this disease, then opiates are always to be suspected. And it is certain, that the patient is relieved as oft as his stools are copious; and it is common to go to stool more frequently without purgatives than with them. Moreover, I have so often observed, that they who were suddenly cured by opium, were subject to a relapse; and that almost all who used purgatives were relieved by them, that I am inclined to believe, that nine tenths of our dysenteries might be cured by a constant use of laxative purges, emolient clysters, and chicken-broth: but it must be observed, that

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manna agrees best with some, rhubarb with others, jalap, mercury, and toasted nutmeg with others, whilst others are sooner cured with emollient clysters. Upon the whole, I am convinced from experience, that most of the dysenteries I have hitherto met with, might be cured by purging mildly, but constantly; and at the same time abating the acrimony in the great guts by emollient clysters, and in the small ones and stomach by plenty of absorbents, and a diet of chicken-broth. I use opium only when the disease is mild, or after its violence is abated by evacuates and emollients. At such times the patient is extremely well pleased with the comfort and ease which he thereby enjoys. It is indeed the best cordial in these circumstances; but by the continued and uninterrupted use of it, without intermediate purgatives, the recovery will be so much the slower.

In this disease opiates and purgatives have opposite effects; and since every copious stool gives sensible relief, even when procured by medicine, it is a strong objection against the free use of opium; yet I have often

often given both at the same time, and that with success; for provided the opium was not in such a quantity as to hinder the operation of the purge, it was both an excellent anodyne and cordial. Nevertheless, I have met with some, who at the end of a fatal dysentery, were so exhausted by the continual *stimulus* and frequent evacuations, that tho' by the failure of the *vis vitæ* the bloody stools and gripes were ceased (as is constant before death) yet they found themselves so excessively wearied and oppressed, that they would have given all the world for a sound sleep: but opium was not of the least service here; enfeebled nature is at this time unable to keep up the circulation to the extreme capillaries, and therefore both the pain and the purging ceases, the morbid matter is reabsorbed, and nature thereby so much oppressed, that at last even the painful lassitude ceases, and the dying person departs without a struggle.

The dysentery is sometimes attended with a fever, where opium would still be more prejudicial than where the disease is con-

finer to the intestines; and indeed it seems a general rule, that putrid and inflammatory fevers are made much worse by opium, unless where the crisis is an external suppuration, such as the small-pox.

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SECTION VIII.

The effects of opium in the tenesmus.

THE *tenesmus* arises from a *stimulus* in the *rectum*, which is sometimes mild, and easily mitigated, corrected, or expelled by stool. Opium will often make the *stimulus* less, or abate the sense of it, till the acrimony is removed, and the patient cured.

Ex. gr. I have often seen a *tenesmus* occasioned by a dose of strong physic, immediately cured by a dose of opium. I knew one patient, who, for a violent *chordee*, rubbed in two or three ounces of *unguentum Neapolitanum* on the *perineum* in one night, and thereby brought on a sudden and violent *tenesmus* the next morning; of which he was cured in a few hours by one large dose of opium. It abated the *stimulus* on the *rectum*, whilst the mercury in the mean time entered into the blood, when the cause being removed, the effect ceased.

But, on the other hand, if this *stimulus* can neither be corrected nor expelled; then, altho' you give opium and abate the *stimulus* for a time, yet the *tenesmus* will return as soon as the influence of the opium is over. Thus, for instance, a plumb-stone which had been swallowed, became incrustated to such a size and degree of hardness, that it could not pass the *sphincter ani*; so that it became a perpetual *stimulus* to the *rectum*, till it was brought away by proper instruments.

In another case, the internal coat of that intestine separated, and at last came out at the *anus*, and was cut off; but before it was protruded, the patient was in constant uneasiness from a *tenesmus*. Now it is easy to discern how ineffectual opium would have been in both the preceding cases.

It is not unusual for a *tenesmus*, coming on at the end of a dysentery, to be cured by opium alone; tho' in this case it is a common practice to give a brisk mercurial purge; my method is generally to give the purgative first, and the opium immediately after it.

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If both together do not succeed, I give a small clyster of about four ounces, made up of oil and the yolk of an egg, and injected so gently, as but just to pass the *sphincter* and no further.

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SECTION IX.

The effect of opium in the nephritis.

MONSIEUR Geoffroy, tho' he extolls opium in many cases, lays down a maxim, which, if true, would make it almost useless, *viz.* He says, we should not suppress the efforts of nature tending to expel what is noxious: thus opium should not be given when there is a small stone in the kidneys or ureters, because opium will hinder nature from exerting herself in expelling it.

But here he has both experience and theory against him. We frequently see the most racking nephritic pains mitigated so much by fifty or sixty drops of *liquid laudanum*, that the patient has reckoned this interval of ease an heaven, when compared to his former state; and at last the stone has entered the bladder with very little pain.

The exquisite torture which a small stone will sometimes give in its passage to the bladder, and the ease with which the like stones pass at other times, make it probable, that
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the pain is owing to the spasmodic contraction of the kidneys, ureters, or bladder. Such spasmodic contractions are increased by every effort of nature to expel the *stimulus*. Thus I have known a stone, not above half the size of a raisin-stone, give as much pain in the neck of the bladder, and suppress the urine as effectually as one of the bulk of an hen's egg. I have put back such a small stone by the catheter, and the patient has voided it with so much ease afterwards, that he knew not when it passed the *urethra*.

It is not improbable, that in nephritic pains a large dose of opium may abate the pain so much as to remove that constriction of the ureter, which alone hindered so small a stone from passing; after the removal of which, the ureter may easily and gradually be dilated by the accumulated urine, so as to allow the stimulating stone to change its unfavourable situation, and slide down to the bladder. I own, that a moderate dose of a paregoric does no good; perhaps it increases the spasm, as it often does in hysteric cases.

Mr. Geoffroy says, we should not check the efforts of nature to expel what is noxious;
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yet when the neck of the bladder is spasmodically contracted by the *stimulus* of a small stone, the more nature exerts her efforts, the further she is from her purpose of expelling it; nay, the efforts of nature in this case are rather to retain than expel, to shut rather than open the mouth of the bladder. Moreover, if Geoffroy's maxim held good, opium would be prejudicial in the catarrh, *diarrhœa*, dysenteric and colic pains, and almost in all the cases wherein we find by experience it is most beneficial; as I shall afterwards have occasion to observe.

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SECTION X.

Of the effects of opium in pregnancy.

THE *nausea* and sickness soon after conception cannot be ascribed to a *pletthora*, or accumulation of humours; but to some change in the *uterus*, which we cannot explain: yet it is a change which, by sympathy, seems to affect the whole nervous system.

As the vomiting and *nausea* of pregnant women is not so much owing to any accumulation of humours in the stomach, or bile in the hepatic vessels, as to the sympathy of the *viscera* with the *uterus*; and, like the seasickness, may be considered as a nervous disease; I have made some patients much the easier by giving five drops of *liquid laudanum* frequently in mint or cinnamon-water, or in claret boiled with spices. This gives them a temporary relief, as spirit of hartshorn relieves them when faintish; yet in a more advanced state of pregnancy, I think opium is improper. Nothing then relieves them so much

much and so often as repeated bleedings, going abroad in the cool free air, when they can bear exercise, and living abstemiously upon a vegetable diet; so that reasoning from this experience and analogy, we may conclude, *a priori*, that because the *menfes* are now stopped, and they grow unactive, complaining of heat and weariness, having their veins swelled, and their bulk and weight gradually increased; and because evacuations, especially bleeding, do them most service, opium must therefore do them harm: and I can likewise add from experience, that when I prescribed by general rules, till I could learn the particular ones from practice, it was a general rule with me, that opium was good for a vomiting; I therefore gave it to a breeding woman, who vomited bile every morning for some months. The remedy was worse than the disease; her sickness continued, and increased the more when the vomiting was stopped; which nevertheless returned with more violence, after having suffered much additional sickness. Bleeding and half starving, after all, was the best palliative.

SECTION XI.

Of the effects of opium in labour-pains.

LABOUR-pains are sensibly promoted by opium. Some years ago we used to give to women in labour, powders to promote the birth, of borax, saffron, myrrh, &c. but no medicine that I ever tried or saw tried, is to be compared to opium, tho' even that often fails; as indeed every thing must do, when the birth is retarded by an unfavourable position of the child, &c.

It may seem a kind of paradox, that the medicine, which in the opinion of the world is thought to be chiefly useful, as it abates a *stimulus*, should yet be the best promoter of that *stimulus* which excites labour-pains.

But this will appear less strange if we consider, that in the present case the *stimulus* arises from the bulk of the *fœtus*; and as opium rarifies the blood, and makes the capillaries more plethoric, it must stimulate the *uterus*, which is already too much straitened, and has its neck compressed by the *fœtus*.

Thus

Thus opium may increase the natural *stimulus*, and perhaps at the same time facilitate the birth, by abating false pains, and such irregular tumults of the nerves, or spasms, as might retard the dilatation of the *os tinæ*.

The dose of *laudanum* that I prescribe to a Woman in labour, is thirty drops in an ʒviii. mixture, with ʒi. syr. papav. alb. three or four spoonfuls of which is to be taken immediately, and the rest in smaller doses, so as to use the whole in a few hours. When this dose does not succeed, I do not repeat the prescription for twelve or fourteen hours, that I may not over-dose a person who is to undergo so great a change, as happens after the birth.

Altho' I commonly prescribe this anodyne julep as soon as I think nature requires such assistance; yet if I find that the child presents so unfavourably, that no pains will be sufficient till its position be changed, I omit the julep, and have recourse to manual operations: neither do I persist in the use of the opiate, if I find it has not succeeded, or if nature is doing well without it.

I think, in fact, that labour-pains are most apt to come on in the night, or after a sound sleep, which is very agreeable to the theory already explained. It was observed, that in our sleep, all our vessels are more distended than while awake, and of consequence the labour-pains must be then increased; since they arise from the too great straitness of the *uterus*, in proportion to the size of the *fœtus*.

After delivery most women have what they call grinding-pains in the belly; for which opium is the best cure that I know. Before I was acquainted with its effects in this complaint, I was quite out of conceit with hysteric plaisters applied to the navel; and rather preferred a hot linnen napkin, folded and dipped in camphirated spirit of wine, or Hungary-water, in which was dissolved *olei macis per expressionem* ʒi. to ʒviii. of the spirit. This was laid over the belly whilst warm, and I thought with success: but it was attended with one great inconvenience, which was, that it dried too soon, and the wetting it often was improper in cases

cases of this nature, especially if the patient sweat plentifully.

At present, I think, opium answers the end much better than any thing else.

Women in laying in of their first child are not so liable to these grinding-pains as afterwards; because perhaps the fibres are then more elastic than after many births.

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SECTION XII.

Of the effects of opium in the milk-fever.

ALTHO' the grinding-pains after delivery require opium, yet the milk-fever, which comes about the third day, will not admit of the continued use of it.

This fever seems to be the effect of a distention in the breasts, occasioned by a greater quantity of blood than ordinary being sent at that time to those parts. The conflux of blood to those glands puts every fibre on the stretch, and thereby raises a fever: opium will not lessen this conflux, nor diminish the distention; therefore if this symptomatic fever is so great as to deserve our attention, I would always omit the use of opium till the fever was abated, even tho' the patient complains much of wanting rest. When this fever is mild, you may give opium safely, and not otherwise. I have often observed lying-in women sensibly relieved by opiates, for a day or two; but they soon after left it off, because it had not so good effects when continued:

tinued : some of them laid it aside the very night when the milk-fever abated, and were surprized to find how much better they had slept without it ; not animadverting to the favourable turn which their fever had taken, which before hindered them from rest,

SEC.

SECTION XIII.

Of the effects of opium in a weed.

A Weed is another ailment to which women in child-bed are liable, and opium is the best cure; but this is by no means a rule without exceptions.

Women after delivery are under much the same circumstances as one who has lost a great quantity of blood from a wounded artery. The great and sudden evacuation makes them easily disordered by an irregularity in the non-naturals. Their blood is much dissolved, and soon rarified; their nerves are delicate, and easily irritated by the passions of the mind; their pores are very open, and a stoppage of perspiration gives rise to most of their complaints; for the suppression of the *lochia* is either the effect of cold, or passions of the mind, or too hot a regimen: and it is well known, that an obstruction of this necessary discharge is very dangerous.

If a lying-in woman, by any mismanagement, is suddenly seized with cold shiver-

ings, pains in the head, and sickness, as in the beginning of an ague fit; and if this is succeeded by a hot fit, and then a critical sweat, which sets all to rights again; this we commonly call a *weed*: the technical term is an *ephemera*, or a fever of one day. From the delicacy of their nerves, a trifle will sometimes begin this *horror febrilis*, even when we suppose their blood in a healthy state; therefore any thing that brings on a critical sweat, will soon prove a cure. This is with less difficulty brought about, because their blood is not viciated, and by their present habit of body they are easily thrown into a sweat which proves critical. Opium will hasten this effect, and bring on a crisis before the blood is further changed; for if the perspiration has not been long stopped, it will certainly produce a sweat and a speedy cure: or if some transitory passion of the mind has raised a sudden fever, a large dose of opium will do more good at the beginning than any other medicine.

As women in child-bed are more susceptible of such febrile ferments than others, so the dissolved state of their blood makes them
more

more easily cured by a critical sweat. But there are also exceptions to this rule; for sometimes the cause is permanent, and can neither be immediately expelled nor corrected; or perhaps the febrile ferment has already changed the crasis of the blood to such a degree, that opium will either not prove at all sudorific, or else brings on a clammy sweat, which exhausts the strength instead of relieving the patient. Bleeding is most proper here, and opium will do harm; as is always the case when we attempt to force a crisis before nature has prepared the morbid matter.

I always give opium on the first attack, and judge by its effects if I should continue it or not; for if it is not of service at the beginning, no good is to be expected from it; and where it does no good, it often does harm.

Almost every fever, which seizes a lying-in woman from some error in the nonnaturals, puts on the appearances, which I have just now described; and therefore is called a *weed* at the beginning: but if it continues, they call it only a *fever*; altho' there is no difference, but in its shorter or longer duration.

This short fever has a slight cause, and is easily brought to a crisis; the other is quite the reverse, and often proves mortal: sometimes it deposite a critical fluxion, of more or less consequence, according to the nature of its situation. It frequently causes a supuration, and sometimes a *scirrhus* in the breast. Very great caution and attention is requisite in the use of *laudanum* in this continued fever, and the best rule of judging how far it may be of service, is to note its effects at the beginning.

A lady, for a cold she had caught on the fourth day after delivery, took *laudanum* as soon as she found the weed begin, and by mistake took eighty drops of it in twelve hours, without being disposed to sleep; and remembering that I had formerly said a weed was to be cured by sweating, she made use of a warm hysteric julep, and took white wine in her posset drink, and panado too freely; by all which means the fever was continued, and she died of it in seven days. In this case, the heat of her medicines and diet were sufficient to account for her death.

She

She procured the opium from three different persons, who knew not what each other had given. A greasy kind of sweat was forced out, which she said would kill her if continued ; but she soon found by experience, that she could neither bear to sweat, nor to be without it. She was vastly oppressed, and moaned and sighed continually, without any signs of an approaching crisis. No one can be positive what would have been the event, if she had only taken one dose of *laudanum* ; but we may lay it down for a rule, that there is always danger in the use of it when it does not operate as a pacific, unless when the patient has been accustomed to it ; for a long continued use of it will make it cease to have that effect. I have made it likewise a fixed rule, not to continue the use of it when it forces such a sleep, as the wearied patient would rather be without. In the above case it did not dispose her to rest ; but occasioned a sort of anxiety and universal restlessness, more than she had before.

It is a common maxim, that sweating or purging should not be promoted, when they exhaust or over-fatigue those whom we ex-

pected should have been relieved by them ; and I suspect that the same maxim will hold as often good with regard to the use of opium.

Wiseman, in speaking of the fevers after child-bed, gives us a terrible idea of them, as apt to poison the mass of blood ; and brings some instances of their ending in abscesses, with caries and fatal gangrenes, yielding to no method of cure. Therefore, upon the whole, when I recommend opium in a weed, I mean a short slight fever, where the morbid matter may be soon concocted and expelled by sweat, which is the cure of the greatest part of them. To this crisis I think opium contributes very sensibly, especially if a stopped perspiration brought on the paroxysm : and in this weed opium will often quiet such nervous tumults as might disturb or prevent the natural crisis, so as to convert a mild *ephemera* into a putrid fever. I suspect that many weeds have been changed into putrid fevers by the hot regimen prescribed by the nurses, whose maxim it is, that one who has lost so much blood must be supported by cordials, *i. e.* plenty of wine.

SECTION XIV.

Of the effects of opium in the lochia.

THE immoderate flux of the *lochia* is oftener abated by opium than by any thing else; *e. g.*

If we find one whose constitution is weak, who has already lost much blood, with cold extremities and great languor, and yet the *lochia* flowing excessively, without any extraordinary cause, opium affords the best cure. Perhaps the uterine vessels have lost much of their elasticity, and opium restores it; but whatever be its way of operating, all other medicines, that I have tried, are not worthy to be compared to it.

Again, if a long continued hard labour has occasioned an excessive flooding, calm and undisturbed rest sets all to rights again; and we find opium contributes more to this, than any other medicine.

An extraordinary flux of the *lochia* is sometimes the effect of part of the *placenta*,
or

or some coagulated blood left in the *uterus*; but which soever of them it be, if the internal orifice is so shut, that they cannot be brought away by the hand, all must be left to nature; for no internal medicine can dissolve or expel them: all that can be done, is to procure intervals of ease, which is best done by opium; to be continued or not, according to its effects, which will be various. The good women will always insist, that you must expel what is retained; as if we could contract the womb, and make it discharge its contents at pleasure. And it must be owned, that all our systematic writers are full of prescriptions for expelling a dead *fœtus*, a mole, a broken *placenta*, or grumous blood; from them we learn to prescribe copiously a farago of useless, if not hurtful drugs; and by this practice, I think, we have seldom, if ever, done good, but often mischief. What convinced me the more of this is, that frequently when I have been told that something remained in the womb, I found by the event my informer had been mistaken; for my patients grew well, tho' nothing was thence

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expelled : and I have met with such cases twenty times for once that I have been rightly informed. Therefore be not too forward to prescribe, for time will often cure without medicine.

SEC.

SECTION XV.

Of the effects of opium in the flux of the menses.

WOMEN are many times subject to an immoderate flux of the *menses* from a constant *stimulus*, which opium abates. Here indeed it is only palliative, and the disease returns when the use of the opium is discontinued; but a palliative cure will often prove a perfect one, by allowing nature time, opportunity, and strength to exert herself. A. B. had a violent pain in her belly and back, with too frequent returns of her *menses*, and in too great a quantity. She took opium, and was better again: she tried to do without it, because she found it was only palliative; but the return of her pain and flooding made her glad to have recourse to it again and again, for almost any exercise brought back her complaints. At last she abstained from all exercise, and gave over the use of opium gradually; but tho' the flux was moderated, she continues at present very infirm, and it is now five years since she was first dis-

disposed : however, the opium gave her at least many intervals free from pain: I sometimes suspected, that during those intervals the flux was only suspended and accumulated, but that it was not upon the whole abated ; yet even upon this supposition, the opium seemed to be of great service to her, by frequently suspending the pain, and allowing nature time to recruit, and giving her spirits and strength to bear the evacuation.

I remember some, who about the time that their *menfes* left them, had their last periods unequal, and sometimes a flooding with great lowness of spirits : opium was to such a cordial extremely grateful and seasonable. One Mrs. ----, that was weakly, with a very delicate habit, a slow sunk pulse, cold extremities, and a desponding mind, received more benefit from opium alone than I could well believe : it not only suspended her menstrual flooding, but all her fears and gloomy ideas. All her friends advised her to lay aside the use of opium, lest it should by habit become necessary ; but she whispered me privately, that she would rather lay aside her friends. However she proved with child,
and

and after she felt it quick, she was then able to be without her opium, and not before : now she keeps it by her for a day of distress, *i. e.* for desponding fits. When I considered how small and how slow her pulse was, I tried a variety of hysteric juleps, as a *succedaneum* to the opium, but in vain.

After all, I am still doubtful whether opium does directly abate the immoderate flux of the *menfes* or *lochia* at any time. I am satisfied, that if opium increases a *plethora*, as I think it does, it must of consequence have a direct tendency to promote that very hæmorrhage which indirectly it abates; but this is no paradox. When a woman is in perfect health, the uterine hæmorrhages cease of themselves; but if a languor, a nervous weakness, or want of elasticity continues that hæmorrhage, opium will stop it by curing the languor: at least I am positive that when the languor has been so great, that the patient found her head and memory confused to a degree which made her apprehensive of a dismal *melancholia*, I have given to one in that case thirty drops of *liquid laudanum* at night, and ten in the

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morn-

morning, with very great benefit; and advised the use of strong ale pretty freely, to prevent a relapse into this desponding condition, altho' she was very averse to it, lest it should promote her flooding, which she supposed the cause of her low spirits; whereas I thought it the effect of her weakness, because she had all the signs of a feeble and slow circulation during the hæmorrhage: and it was in fact better after the opium and strong ale than at any other time. Yet still I own, that neither strong ale nor any other cordial that I know, can supply the place of opium when the circulation is slow and feeble, the extremities chilled, the nerves unstrung, the heart beating for fear of they do not know what, the mind presaging and apprehending every thing that is bad.

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SECTION XVI.

Of the effects of opium in spasms.

Spasmodic contractions do sometimes increase and sometimes abate the *lochia* or *menfes*; on the other hand, opium does increase or diminish spasms: no wonder then if opium has very different effects at different times, as we see it cures either an excess or suppression of the uterine fluxes. I will not pretend to say what spasms it can or cannot cure; but in general, I think opium very hurtful in all spasms from a plethoric habit, whether with or without inflammation; and therefore it seems probable that it will do good in all spasms from languor or inanition. If any exceptions occur to me as I proceed, I shall take notice of them.

Mr. F. had a cough, for which he was advised to take Matthews's pills; but being of a plethoric habit, and taking them after a plentiful supper, and his usual load of liquor, in about two hours he complained of a most violent contraction in his stomach, so that
he

he thought himself at the point of death. I blooded him immediately till he fainted; after which he vomited, and was perfectly well. This I took for a spasm in the stomach, brought on by the opium and the load of meat and drink with which it was overcharged.

SEC.

SECTION XVII.

Of the effects of opium in the hæmorrhoids.

IN the hæmorrhoids opium apparently does harm, in as much as it makes the patient costive, and hardens the *feces* in the colon and *rectum*; whereby those intestines become more heated and stimulated, and the return of the blood in the hæmorrhoid veins is impeded, and must consequently cause a further dilatation of the piles. It likewise is evident, that if opium increases a *plethora*, it must also increase the piles.

The internal and external hæmorrhoids are sometimes so distended, that the patient has a constant *tenesmus*, with unsufferable pain. This was once my own case, after applying some *bals. traumat.* to the part. It gave me the same sensation as if a hard substance was thrust up the *anus*, and was attended with a constant provocation to stool. A great dose of opium abates this *stimulus*, but makes it return with more violence than before, by increasing the distention; and if
the

the *tetanus* is great, it does not even prove a palliative.

The cure consists in applying as many leeches as will enter, and letting them draw blood as long as they will; then we should use emollients or restringents outwardly, according to the present state of the part affected and age of the patient.

Opium is still more improper for that degree of the *proidentia ani* called *verticillum*, which cannot be put up again till the part is in some degree emptied by evacuations. Scarifications and leeches are the first part of the cure, and restringents applied outwardly complete it: if the evacuation by leeches or scarification has been sufficient, emollient poultices do harm, and fomentations are but trifling. Costiveness makes it worse, yet clysters do no good; but in as much as they remove the present compression on the veins in the *rectum*.

SECTION XVIII.

Of the effects of opium in the rhumatism.

WHAT I have said of opium in the cure of spasms, is further illustrated by its effects in rhumatic cases. Give opium to a rhumatic patient in the beginning of the disease, and it will make him fall asleep; but he will soon awake with a violent and painful start, which to me is an indication for more bleeding, and no opium. It is true, that this starting is likewise brought on when the sleep is not caused by opium, and is so painful and surprising, that the patient cries out wildly, like one in a fright; but it is as true, that the opium increases this symptom, which is as much of the spasmodic kind as a cramp.

Give to the same patient the same dose of opium at the end of the disease, and it occasions no starting. Both sleep and opium distend the vessels, already too much upon the stretch from the disease itself; and I have often thought my rhumatic patients a little eased

eased of their pains till they went to sleep, after which they awaked in more pain, had some of the joints more swelled, and complained of more heat upon the skin. Therefore if opium and natural sleep have the same effects, as I have endeavoured to show, it will follow, even *a priori*, that opium will do harm in the beginning of a rheumatism: perhaps this disease is chiefly seated in those vessels and fibres which opium makes full and turgid; perhaps it gives some *remora* to the contents of the serous vessels, and thereby thickens the *serum*, as it does the *mucus* in a catarrh: in which case it will be apt to convert an acute rheumatism into a chronic one, if it does no worse.

From the effects I have observed after opium hath been given in rheumatisms and fevers, I think it as likely to be hurtful in all spasms from infarction, as to be useful in convulsions from inanition, and some hysteric fits. Hence it is that it increases cramps in pregnant women, on account of their plethoric state.

Altho' I allow that opium may be safely given in the end of a rheumatism, yet that is

saying little more, than that it is safe when the disease is gone; but least we should mistake so far as to think the disease gone when it is not, the surest course is to use no opium, even at the end of this disease.

SEC.

SECTION XIX.

Of the effects of opium after operations in surgery.

EVERY considerable chirurgical operation in a timorous delicate person is apt to raise a tumult in the nerves, and sometimes convulsions, during the operation. Opium taken two or three hours before the operation gives courage and steddiness both of body and mind, by which means such convulsions are prevented: it does not abate the pain of the operation, as the patient expected; but it makes him better able to bear it.

On the other hand, we find, that after an amputation, the stump begins to swell, and gradually grows more and more tense; and if very tense, it starts as soon as they begin to sleep, and the starting seems so violent to the patient, that he is much afraid that the new-tied arteries will burst open again.

There was a time when I thought opium good for every irregular motion of the spirits.

rits. I therefore gave it in the above case, but the starting was so much increased by it, that the patient begged to be kept awake. I mention this the rather, because I know some give *laudanum* after every operation; and tho' it is more safe at first, yet when the inflamed state comes on, and all the parts are swelled, hot, and tense, or when even sleep itself does harm, opium must doubtless increase the inflammation. Bleeding and a cool regimen, an easy position and slack bandage, are the proper means of cure.

This starting is at the time when the stump is most inflamed, and abates as soon as plenty of *pus* is formed, which is the natural crisis of the inflammation. If you let blood, or give the *cortex* or opium immediately before the *pus* appears, the patient will find himself soon better, and then the medicines have the credit of it; which they are far from meriting, how much soever they may deserve for promoting suppuration at other times,

Some surgeons are not only very cautious to prevent the loss of much blood in every amputation, but they are as careful to force sleep in the inflamed state which succeeds it;
both

both which practices are very wrong: for as to the latter, it is adding fuel to the febrile fire; and since it is of use that the patient lose a moderate quantity of blood, it is of little consequence whether it be during the operation, or soon after it: tho' I must own the patient should not see it in the time of the operation, because it may alarm and discourage him.

SEC.

SECTION XX.

Of the effects of opium in fractures.

THERE is another case wherein opium is often prescribed, but with no better success than in the former, *viz.* After any considerable fracture, when the adjacent parts begin to swell, and to be inflamed, the patient rests ill and awakes with a violent start, which will make a crackling noise in the fractured part. The patient believes the bone must again be reduced; the surgeon is immediately sent for, and (if he wants skill himself) the patient persuades him to examine the fracture; and to prevent for the future the displacing the fractured ends of the bone by such starting, he binds it up again so much the tighter, and gives an opiate; by both which means he increases the inflammation, and consequently the starting. The increased-inflammation makes the parts swell more than before, whereby the bandage becomes still tighter, till at length a gangrene is brought on.

If

If a skilful surgeon had been to'd that his patient had waked out of his sleeps with such startings, that the extremities of the bones were again misplaced, he would conjecture there must be a great tension about the part, either from a tight bandage, a wrong position, or a *plethora*. He would therefore think of nothing but slackening the bandage or rectifying the position, if needful, and letting blood plentifully; but he would no more give opium, than wine or strong drink, except in a fractured rib: in which case, I own, if the patient has a catarrh or cough from the irritation of the points of the rib, which gives him incessant pain, and often makes the ends of the rib wrap upon one another; this cough may inflame the *plethora*, and by its frequent shaking prevent the formation of the *callus*, i. e. hinder the bone from re-uniting. In this case I have given *laudanum* with great success: it abated the cough, and procured rest when the patients were almost quite exhausted; but to prevent the bad effects it is apt to produce in parts that are inflamed, bleeding and purging will be also necessary, if they be plethoric, feverish,

or

or have startings; these evacuations prevent a fluxion, while the opium abates the present *stimulus*. I here suppose that the patient had no cough before the fracture, and has not caught cold, but has a cough from the irritation of the rib. This cough is not to be cured by pectoral tinctures, ptisans, squill-pills, white solution, or any of the balsamics. I remember one case, where I gave the pectorals a fair trial: the patient had a fracture of his rib, where one end of the rib rode above the other, and occasioned such a cough as was likely to hinder the union of the bone; and after the pectorals, I had ordered him, were found of no service, his wife cured him with syrup of poppies.

However absurd it was in me to expect that pectorals would cure a cough occasioned by the prickling points of the rib, yet even afterwards I still retained some confused notion of pectorals being good for a cough, without distinguishing the different causes of it; as if the same pectorals would be equally good for a cough, whether in a pleurisie, peripneumony, or broken rib; whether with or without a fever, in a catarrh, chincough,
or

or in a phlegmatic old man's asthma; whether it was joined with a *plethora*, or atrophy, with dry tubercles, or a running ulcer in the lungs, with water in the breast, or proceeded from spasms: but when I came to consider more maturely these different causes of a cough, I easily perceived the absurdity of an universal pectoral, and of what prejudice it was for young students to be imposed on by technical terms, that seem to have some meaning, tho' they really have none. Nevertheless it must be owned, that technical terms are of use, for avoiding tedious repetitions, tho' it is extremely difficult to prevent the abuse of them.



SEC.

SECTION XXI.

Of the effects of opium in the phthisis pulmonalis.

IF I were asked whether opium is good in a *phthisis pulmonalis*, I would say, that the question was too general: for the term *phthisis pulmonalis* signifies a disease consisting of many stages, and attended with a vast variety of different circumstances, at different times; some of which require, and some forbid the use of opium; but if we descend to particulars, it may be of use to observe, that in the first stage of a consumption, the disease is often a simple catarrh, and easily cured by opium, so as to prevent the *phthisis*; but in the next stage, if the lungs are much obstructed or inflamed, opium will do harm: and inordinate evacuations, with a spare, cool diet, are more properly indicated, especially if the case be attended with an hæmoptoe, asthma, or fever.

In such cases, after the use of opium they expectorate less; they feel a tightness and stif-

ness in the breast; what they cough up is more viscid and thick, and has been detained longer than it used to be, before the use of opium. I own, that if you ask the patient next morning how he is, he will very readily tell you, that he has had a fine night, and is much better as to his cough; that he is not so languid as usual, altho' he has rather sweated more. Ask him again the same question, in the evening, when the opium no longer acts, and he will say, he is no worse, only that his cough has been accidentally worse, on account of some error he has committed; and here he will be sure to blame something that he has done, or taken, and indeed will be apt to assign any cause but the true one. He would willingly deceive you, and himself likewise; but if you sit by him for some time, you will get out of him by degrees the real effects of the opium. He will own that he had a trace which gave him spirits, and new hopes; but that now he has a return of all his former ailments, with the signs of more infarction about the breast.

Again, in the ulcerated state of the *phthisis*, the effects of opium are very various, according

ing to the greater or less fluxion upon the part, the degree of inflammation, or the diet made use of. Some cough incessantly when omit it, yet are stuffed up and uneasy when they take it: they can neither be easy with it nor without it. They who continue its use find, that they sleep more and cough less, their sweats are increased, they purge less, and have more strength to cough; but, on the other hand, their nurses say they moan and speak much more in their sleep than they used to do; their thirst is greater in the night, and they are more confused immediately after they are awake.

Much moaning and speaking while asleep are bad signs in all chronic diseases: about the *acme* of acute fevers we expect nothing better. It is a struggle betwixt nature and the disease, and we are so made, that we cannot be without sleep, no more than we can be without meat or drink: both of them supply us with a recruit that is absolutely necessary, and if any disease altogether hinders us from sleeping, or eating, it must soon terminate in recovery or death. This moaning and tossing in our sleep then, as it signifies
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some disease fighting against our natural make or constitution, must, if it continue, impair and ruin it. I say, if it continue; for I know that a heavy supper will give some persons such disturbed rest, as I speak of, without any danger; yet if they continue such suppers as disturb them in this manner every night, those suppers will prove mortal in the end. I have sit by patients in a consumption sleeping by the help of opium, and indeed it is such a picture of nature agonising, that the physicians would need no other argument to put them out of conceit with it, than to be present at this scene.

I have likewise observed, that altho' the patient by experience has found the inconveniency of opium, yet he is more languid without it; he will again and again try it, to help him to pass away a miserable night: tho' he expects no cure from it, yet he has been accustomed to it. He coughs much more when he abstains from it, and has less vigour to enable him to bear the fatigue of it. He is stifled when he takes it, and miserably languid without it. The most certain relief that he may

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expect from it is, that it will shorten his misery with his life.

I have seen many poor patients, who could not afford to pay for our sleepy draughts, undergo some violent struggles with the cough for a certain time, till the matter made its way by expectoration; after which, tho' they continued to cough, yet they spit easily and plentifully. It is true, their consumption went on, and they died of it at last; but they died slowly and gradually, with all their senses about them, like one only exhausted. Whereas the people of rank, who must have something prescribed for every particular ailment, and believe that we have a cure for every symptom, grow impatient if the physician does not abate their cough, and give them some rest in the night. Opium, and nothing but opium, will do this: they take it in many different shapes, and find it of service in making them cough less and sleep more; therefore they continue it, become slaves to it, and must have the dose gradually increased. They moan and struggle under its influence all night, and in the day-time have

have their heads confused. In their last hours, or rather days, they are struggling for breath, their memory fails, and they are half delirious, and attended with a constant *diarrhœa* in spite of the opium that has been taken to prevent it. The poor man, without opium, sinks into his grave with ease both of body and mind, if compared with those splendid persons, who commonly die delirious.

I must observe, that the above description of the effects of opium would need many exceptions to make it accurate; for the patient's age, habit of body, the air, diet, &c. will have much influence, and make a variety in the above *phænomena*; however the representation is true in general. I had once so good an opinion of opium, and that from experience too, that I thought no medicine equal to it, even in a *phthisis pulmonalis*: for I was more sensible, that the cough was lessened after opium, than after any other medicine; but from maturer observation, I am persuaded that it does harm, radically or essentially, while it acts as a palliative. It

confirms the obstruction in the lungs, while it abates the *stimulus* of the ulcer; it feeds the inflammation, but conceals its effects till it is too late; it gives strength to bear the cough, but accumulates the cause of it.

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SECTION XXII.

Of the effects of opium in lowness of spirits.

TO some opium gives a flow of spirits, after once they are accustomed to it; but they find them proportionally depressed, after its influence is over. I saw one phthical patient, who, by the exhilarating quality of opium, would sing songs, and despise death; but ere twenty-four hours were elapsed, he would behave more like a true penitent: he fancied he was dying, and wanted the assistance of a clergyman. These two opposite characters he often alternately assumed; and when a clergyman could not be got, he was so miserable from excessive languor, that he repeated his dose of opium before the usual time; which set his mind at ease before the other consolation could arrive.

Mrs. C. D. died of a consumption after fifteen months illness. She used no opium till within three weeks of her death; her diet had been cool and abstemious from the beginning, which probably preserved her so

long; for she had been of a weakly disposition, and a bad habit of body a great while. I found her pulse was slow and languid, and she complained of great lassitude; so that life became a burden to her. A dose of opium relieved her so much, that she regretted she had not begun taking it sooner: she said it was a blessed medicine for the present relief it gave, tho' it should do no more good. When the effects of opium ceased, her languor returned, and the dose was renewed. Some advised her not to indulge herself in the use of opium. She answered, that she would take it, tho' she was certain it would hasten her death; for it was better to have one easy death, if it could be had, than suffer an hundred of the miserable kind: for such she reckoned every fit of languor. Here I had a most evident instance of the power of opium, in giving a flow of spirits when they were reduced to the lowest ebb. It was in the incurable stage of the disease, when advanced beyond all hopes, and when the cough seemed abated merely through a defect of the *vis vitalis*. No wine or cordial would
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serve the purpose in the present case, because they disagreed with her stomach.

Mrs. R. had been long accustomed to *liquid laudanum*, and took betwixt three and four hundred drops a day. Without it, she was greatly depressed with a kind of melancholy; but with it, behaved like one in liquor, being very loquacious, and apparently very happy. But the best proof we have of this property of opium, is the effects it produces among the Turks. There a whole nation, or a great part of them, are accustomed to take opium freely; and when the practice is become habitual, it loses its soporific quality, and is used to give courage in the day of battle. If a long and confirmed habit of taking opium can divest it of its narcotic quality, it will probably be found a valuable drug, in some cases wherein it is often dangerous, by being too apt to cause sleep. A certain surgeon always took some opium, and gave of it likewise to his patient, when he had any considerable operation to perform; but I must own, that a glass of generous wine had always a better effect upon me, when I wanted to excite courage. The rea-

son why it might not succeed with me might be, that I had not been accustomed to take it, except when indisposed; and, as I hinted before, it is the habitual use of it that renders it ineffectual in promoting sleep, at least I can be positive, that it does not give a flow of spirits to every one alike: and yet we are told, that the Turks doubt no more of its power to exhilarate and give courage, than we do of its soporific quality. I have at present one patient, who has used it for twelve years: he never finds that it disposes him to sleep at all, tho' he takes four tea-spoonfuls every day of the *liquid laudanum*.

Some years ago, a sailor came from the East Indies with a very ill habit of body, after drinking rack-punch for some years. He had a large abscess in his thigh, which I was in hopes would have cured him. But after it broke, and had almost suffocated all in the room with the smell, he found his spirits in two days so depressed, that he despaired of recovery: he told me, that he perceived nature gradually sinking since the opening of the abscess; for which I gave him twenty-five drops of *liquid laudanum*. The next morn-

morning he told me he was in heaven ; and indeed the change which that single dose had made upon him in one night was astonishing : for his lips and cheeks recovered their red colour ; his eyes, which before were sunk and lifeless, were now sparkling and brisk. This was a remarkable instance of the effect of opium, in giving courage and curing a languor or excessive weariness. He perfectly recovered without any other medicine, and became so much prejudiced in its favour, that he swore it should go through the world with him, and nought but death should part them. Had he taken the opium while the suppuration was advancing, the inflammation and opium would have counteracted each other ; the one tending to hinder, the other to promote sleep : the opium would have closed his eyes, then immediately the inflammation would have made him moan, till he awaked with a violent start out of a terrible dream. Thus he would have continued restless, betwixt sleeping and waking ; so different are the effects of opium in the same person under different circumstances.

SECTION XXIII.

Of the effects of opium in the melancholia and mania.

WHEN first I used opium for a *melancholia*, it proved a very successful remedy; so that I doubted not but that it acted as a specific, and only failed in other peoples hands, because they gave it in too small doses. I gave six grains in one night to a young gentleman, for a recent melancholy: he fell into a profound sleep, and sweated much all night; yet without my orders, he was that morning put into the cold bath, and again laid in bed to sweat. This was bold, but blind practice; however, he was well in eight days, tho' I could not determine whether the opium or the bath had the greatest share in the cure.

I gave four grains of opium to a gentleman who lost the use of her reason on a sudden, by the barbarous treatment of her husband, and she was cured by that single dose. Whether a case so recent would not have been easily cured without medicines, or whether the profound sleep she fell into might
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contribute totally to efface the incoherent set of ideas which possessed her mind before she took the opium, I will not pretend to determine; but soon after this, I had some other instances, as I thought, of the good effects of opium in this disease, which made me fond of it as a specific in the like cases. At length I had a patient labouring under a religious melancholy, who talked of nothing but the unpardonable sin, &c. In short, despair had drove him mad. In one of his mad fits he took such a dose of *laudanum*, without the knowledge of his physicians, as had almost killed him. When we found him in that condition, we discovered that he had taken *laudanum* by the smell of his breath, but we knew not the quantity; his sleep was so profound, that he could not be awakened; his breathing was high and laborious, attended with a profuse sweat, moaning, a florid countenance, and frequent spasms of the muscles. Tho' he recovered of the opium, his *melancholia* continued. A larger dose would probably have made his florid complexion turn livid, his breathing unequal and interrupted, his sweat cold and viscid, &c.

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This one instance made me more a sceptic than before, as to the specific quality of opium in this disease; but still I thought the case was unfavourable, as the disease had been of long continuance, and had likewise long threatened ere it seized him. But since that time I cannot boast of its success, since it has often failed me for several years; and upon the whole of my experience, I begin to conclude, that it only does good where the pulse is slow, and always seems to do harm where the patients are disposed to be outrageous: both which conclusions will agree with what we have said of its effects on the mind, *viz.* that it gives courage and anxiety. I expected to find it of general benefit to such as are very timorous and cowardly; and that it would be hurtful to the impudent, the self-conceited, and bold maniacs: but in fact, I was so frequently disappointed, that I cannot now recommend or forbid it in general; nor do I expect any good from it when the disease has been of a long standing, when the patient is outrageous, or the cause still continues.

SECTION XXIV.

Of the effects of opium after great fatigue.

OPIMUM not only gives vast relief in excessive languor, brought on by several different diseases; but in that languor or excessive weariness arising from too much exercise. I happened once to be under a necessity of walking so far, as to be fatigued most immoderately; for which I took twenty drops of *liquid laudanum*. I lay all night in great tranquility and ease, tho' it did not make me sleep. If one has been fatigued by riding post, no meat nor medicine is equal to *liquid laudanum*, especially if you use a warm bath at the same time; for without the bath, some are over-heated with the exercise, and if they do not sweat the opium will not have so good an effect: nay, it will increase sometimes that heat, but still it is of great use if the perspiration be free.

SECTION XXV.

Of the effects of opium in hysterics and nervous disorders.

OPIUM often composes, and often excites nervous disorders; and I must own, that on this head I am very undetermined in my opinion. I can neither pronounce any thing in general, nor can I reduce the diseases of the nerves, or their cures, to any particular classes. As yet the system of the nerves is to us a mystery, only we know that it is a part of our machine, of the utmost importance. In general we suppose, that most of our diseases are either owing to some fault in the system of the blood-vessels, and their glandular secretions, or in the nerves; for we reckon that these two make up the most variable part of the machine, and of consequence, when the patients have complaints which we cannot consistently ascribe to any fault in the system of the former, we immediately put them to the account of the latter, as if it was a settled point, that
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all diseases must either belong to the sanguinary or to the nervous system. And since the complaints of some patients are so irregular and unaccountable that they cannot belong to the sanguinary system which we understand, they must consequently belong to the nervous system, which we do not understand, and therefore cannot account for. I will not at present examine whether this general division be right or wrong, or whether it does not suppose two systems to be independent, which are at all times intimately and inseparably connected; like those writers who perplex us with the diseases of the solids and fluids, as two distinct classes, tho' there is not one moment of our life in which they do not mutually affect one another.

Neither shall I pretend to limit or define accurately the sense of the term nervous disorders; but I must observe negatively, that I do not mean by nervous disorders, a palsy, epilepsy, apoplexy, vertigo, or other diseases of the head, on which the systematic writers have deservedly bestowed distinct and separate chapters; and which are diseases of the very origin of all the nerves. I take the
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phrase in the lax sense, in which it is commonly used, however improperly; and even in this vulgar sense, nervous disorders signify such a number of diseases essentially different, that it would be absurd to say, that opium is or is not good for them. Again, as to particulars; I would observe, that in those spasms called a rising of the mother, or hysteric fits, neither a moderate nor a large dose of opium always succeeds. It is possible that a very large dose of it might do good, even where a moderate one would increase the tumult; but I own I can say nothing on that head from experience: in general, opium seldom succeeds, except where there has been a very sensible inanition. I have sometimes found it cure hysteric fits like a charm; but it has again failed or been hurtful so often in cases apparently similar, that I think they must have been very different, tho' I mistook them for the same. In general, it rather does harm than good, except in a very great dose; but this is a rule not without exceptions, and only to be used by those who are not apt to mistake cases. In treating hysteric disorders all young physicians give opium a place in
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their practice, because they would mitigate the hysteric pain where ever it is; and sometimes to abate an hysteric vomiting. But I have seen some women seized with an hysteric vomiting, or colic, as often as they were under any disappointment, anger, or vexation, tho' the minute before in perfect health both of body and mind; yet one slight affront has set them immediately a vomiting, with great difficulty of breathing, and the whole train of hysteric symptoms.

What can opium do here? What will our juleps do, and draughts of *sal. absynth.* and *suc. limon.*? What will all our stinking or heating nervous medicines avail? To such patients we are often called, and we go through the fashionable practice till their passion of mind subsides; and then, but not till then, the disease is cured, and we come off with the applause both of ourselves and others.

Passions of the mind alone will as suddenly bring on hysteric fits, as fear and modesty will occasion trembling and blushing; but on the other hand, I suspect, that as we cannot by medicines hinder the blushing or trembling,

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without preventing those passions upon which they depend; neither can we cure such hysteric fits as are owing to anger or pride, till the passions subside. I confess I have, thro' ignorance, given hysteric pills, when I might as well have given pills to purge folly and make my patient wiser.

By what I have said, I do not mean, that when the patient complains grievously of a pain in her head, she should be told that she has none; for she really feels it, but mistakes the cause, when she thinks it independent of her anger. She will not be satisfied unless the physician prescribes; and he may do it with this comfort, that whatever innocent thing he orders, it will generally succeed: for the passions will subside in time, either with or without medicine.

SECTION XXVI.

Of the effects of opium in the nervous asthma.

BY a nervous asthma I do not mean any positive affection of the nerves, but that kind of asthma that has no signs of any preternatural humour in the lungs or *trachea*; in which respect it differs from the humoral asthma. There is indeed a difficult breathing, and sense of obstruction about the lungs; but without any expectoration, even when the fit goes off, as if the whole was a spasm in the lungs. Miss R. was seized with a dry cough, which was incessant, with a short and difficult breathing; but without any sickness, wheezing, defluxion, or expectoration. We thought her lungs were loaded with some viscid humour, which she could not cough up. She was ordered repeated bleedings, blisters, g. *ammoniac*: squills, and *spt. min-direri* in plenty, without producing any expectoration, and without relief. At last we tried, with great caution; what at first we thought might have rivetted the disease; I

mean opium; and contrary to all our expectations, it cured both the cough and asthma, without any sensible evacuation.

This I called a nervous asthma, because it was not humoral; neither was it Floyer's *asthma flatulentum*: it seemed entirely spasmodic. At first the dry incessant cough made me suspect a tubercle in the lungs, for which I thought opium improper; but it is now ten years since she was cured, during which time she has used the opium every night; because without it she is in pain throughout all her body to an intolerable degree, but has no cough, or asthma, nor any sign of a tubercle. After all, I must own, I neither know what made her asthmatic; nor how opium cured her.

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SECTION XXVII.

Of the effects of opium in the rickets and scrophula.

THESE are two very distinct diseases, yet in both, the children are weak, and of a moist constitution; both of them begin to attack children commonly betwixt the time of weaning and the sixth year of their age, and in both diseases the effect of opium is the same; for this reason I shall speak of them under the same head.

I have seen many scrophulous and rickety children, who, after weaning, and rarely before, became weak, pale, and chill; and they commonly had a violent *diarrhœa* at the time of breeding their teeth: but tho' there was a variety in their cases, their ages, and regimen, yet from experience I was convinced, that four or five drops of *liquid laudanum*, or more, given every night, was of very great service to them; especially if they had pains in the belly with looseness, as is often the case.

I am so confident of my success in the use of *liquid laudanum* in the above cases, that if I had children that were threatened with either of these diseases, I would begin early the use of *liquid laudanum* every night, tho' they had neither pains or looseness.

It is true, that I have failed in the cure of many children; but few of them used *liquid laudanum* longer than the looseness or gripes obliged them to it, and some that did use it were quite irregular as to their diet. In order to keep weakly children in tolerable health, steel and Peruvian bark are useful, and their diet and regimen must be carefully attended to; their diet should be hearty, yet light; it should consist in part of flesh-meat, but so small in quantity as not to be burthensome to the stomach nor over heating; and the drink should be chalk and water mixed with wine: the quantities must be regulated by the discretion of the physician.

I will not pretend to determine whether opium does good in these diseases as a cordial, or only because it procures rest, or because it promotes that intestine motion of the blood, of which cold constitutions stand so much in need;

need ; but I think, by the same means as it prevents a *diarrhœa*, it may invigorate the solids, and prevent serous fluxions upon the glands ; it may correct the watery blood as it does in a catarrh. In short, all my cure for the above diseases, consists in *liquid laudanum*, absorbents, steel, bark, and a hearty diet well digested. I know the mothers, who see their children disposed to fluxions, cannot be persuaded, that any thing is so much indicated as purging ; and what they say on this head is so plausible, that the purging method has been adopted and tried almost by every practitioner, and prescribed by every systematic, tho' always without success. I was formerly myself of the same opinion, till experience got the better of my theory ; and now I am fully convinced, that evacuations are rather hurtful, unless when used sparingly, and that both their diet and medicines should be sub-astringent ; among which I reckon the best medicine is an electuary of *conserv. rosar. cynosbat, sal. mart. diascord.* and the *cortex Peruvianus*, as soon as children can be prevailed on to take it. There is a cure prescribed for the *diarrhœa*, which sometimes does

good, but oftener harm; I mean burnt claret with spices: when too much is prepared at a time, it turns sour ere it can be all used; or if given to very young children with a full meal, it grows sour on the stomach; otherwise it does good, when given with toasted bread instead of a meal of other diet.

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SECTION XXVIII.

Of the effects of opium in the tooth-ach.

THE tooth-ach is a disease which opium often cures in one night, but it oftener fails, and sometimes does harm; and no wonder, for the tooth-ach is a more complex disease than we may at first imagine. Sometimes it is a simple catarrh on the gums, and cured by opium in one night; at other times the constitution is plethoric, and evacuations are proper before the use of opium. Sometimes there is a local *plethora*, and scarification, or leeches, or blisters are necessary. There is likewise one kind of tooth-ach from a rotten tooth, or a suppurating gum; another from a small fluxion, easily stopt or repelled; and others from fluxions that are great, proceeding from causes which opium cannot conquer; such as pregnancy, for many women have rheums at that time and at no other: opium may abate their tooth-ach for a night, but whilst the cause is permanent, it will only accumulate the rheum. Repeated
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evacuations or constant drains are the properest methods of cure. Some cachochymic patients have febrile paroxysms, especially if they are plethoric, or of delicate nerves, influenced with every change of weather: such patients must have the cure of their tooth-ach suited to their *cachochymia*, or *plethora*; after which opium will often prevent a relapse, if used every night for some time, as a medicine fit to prevent catarrhs. Tho' I am certain it will often cure this disease, yet I do not know when, so as to tell my patient positively, now it will succeed. I can often determine in what cases it will not do good: for example, when the gums will suppurate, or a rotten tooth must be first extracted, or when the fluxion is too great to be repelled or prevented without proper evacuations. Many are cured by cutting off a great load of hair, and bathing the head every day in cold water. Yet even this we cannot rely upon, it so often fails from some accidental cause, which we are not aware of: and some are cured as readily by bathing the head in warm water. In a word, the causes and cures of this disease are so many and so

fallible, that I have often thought no disease deserved to be called the *opprobrium medicorum* more justly than the tooth-ach. It is a disease in which we have all the advantages of theory, and where our theory is as satisfactory as in any disease whatsoever. We have the greatest advantages of experience; because few of our patients escape the tooth-ach, sooner or later; and its *phenomena* are such as we can perceive, and examine by our senses like a surgical case. It is a fluxion upon a part we can get at, to evacuate the present, and prevent, by derivation, strengtheners, or repellents, succeeding rheums: yet notwithstanding all these advantages, it is perhaps a disease as often cured by a quack, as by the regular physician; *i. e.* it is as often cured by chance as by the rules of art: for the most famous quacks disagree in their practice, and very often fail.

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SECTION XXIX.

Of the effects of opium in the cancer.

A Cancer is a topical disease, frequently curable by extirpation; but if that is delayed too long, the disease spreads its venom through the whole body, and particularly occasions pains in the limbs; for which opium is prescribed with apparent success, for it abates those pains as evidently as it causes sleep: but they as certainly return as soon as the opium has done operating. Mrs. M's pains were on all that side where the breast was cancerated; Mrs. S. had them throughout her whole body; Mrs. L. complained chiefly of pains in her legs, and an universal lassitude. Mrs. B. had a constant sciatic pain, which could not be removed: all these took opium, and received great relief; but it was only temporary, and during the use of it, their cancers grew quickly worse, and they all died. They tried to leave it off, but either pain, or cough, or both, continually obliged them to take it again; and gra-

gradually to increase the dose, as the disease advanced. Their sleep became more and more laborious, being attended with a constant moaning, like one oppressed with sickness. The great temporary relief procured by opium, at a time when nothing else did any service, made me then fix it as a rule, that opium, and nothing else, was of service in a cancerated breast; and the immediate good effects of it easily convinced others, that the observation was right: but one old lady, who was prejudiced against opium, would neither take it, nor indeed any other medicine. She abstained from all cordials, and lived upon chicken-broth; yet tho' she was old, infirm, and of a sluggish habit of body, she lived twelve months longer than I expected. She had comparatively no pain, and at last died in tranquility: whereas they who used the opium, were strong and young, and, I may say, died a violent death, compared with the old lady's.

This case made me doubt of my old maxim, and upon reflection, I suspect, that opium made them die sooner than they would have done without it; and that by taking it, they were
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every day over-heated, and their moaning every night seemed to shew, that nature was oppressed thereby. The cancerous humour was probably accumulated, and rendered more acrid; for the pains soon returned with more violence; and in Mrs. S's case, when the opium abated her pain, it increased her sickness. If to all this, we add our general character of opium, it will confirm my conjecture of its irritating quality in cancers. If it is a property of opium to obstruct and distend the serous vessels and glands, and to swell the whole body; if it particularly causes tumefactions in the salivary glands; and if it thickens our *mucus*, increases the heat, thirst, &c. no wonder it does harm to a scirrhus or cancerous breast, which is already indissolvably hard, and whose humour is already so acrid, that it often excoriates any other part of the skin upon which it falls.

That the pains in the limbs, &c. above mentioned are the effect of the cancerous humour in the blood, seems probable from hence, that when the breast is cut off, the pains are abated, while the suppuration is plentiful; but return again when the suppuration ceases:

so that it is to be wished that it could be kept open like an issue.

From what I have hinted, I suspect that there is no hopes of curing a cancer by amputation, after the patient is afflicted with pains in the extremities; if these pains are the effect of the cancerous humour circulating through the body, as I think is very probable.

Moreover, if it is owing to the plentiful suppuration after the operation, that these pains cease, then, tho' the patient entertains great hopes upon this event, the physician ought not to flatter himself that the danger is removed; for the best he can make of it is, to keep the wound as large and as long from healing as possible, and to prognosticate a relapse if ever it is cicatrised. If this be the true state of the case, it shews us the impropriety of the common practice, in making use of astringents and all endeavours to cicatrise the ulcer, either before or after the extirpation.

In an open cancer, astringent applications make it extend its roots, and emolient cataplasms extend its branches. Astringents seal
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up the mouths from which the cancerous humour constantly oozed forth, and when it is shut up at one passage, it must direct its progress some other way; *i. e.* it must enlarge its basis: but astringents are still more improper for cicatrising the wound after amputation. One thing that has brought astringent applications more in use is, that relaxing medicines very much increase the fungus of a manifest cancer; but when the ulcer and quantity of cancerous matter are increased, part of it is absorbed, and therefore the patient dies hectic. So that, in truth, astringents and relaxing medicines both very sensibly do harm. The suppuration which I would propose to encourage, is not from the cancer itself, from which no good *pus* can ever be produced; but I would promote the generation of that good *pus*, which comes from the wound after all the cancer is cut away. There astringents do harm, by cicatrizing what should always be kept open, if possible.

To conclude, it is universally agreed, that a cancer is irritated by every thing that heats
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and quickens the circulation, or disturbs the mind; *i. e.* by too vehement exercise, too hearty diet, strong drink, or violent passions. If this be true, and I am fully persuaded it is, then opium must be bad for a cancer, and a cool spare diet must be good.

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SECTION XXX.

Of the effects of opium in the stone in the kidneys.

A Small stone in one of the kidneys, on its entering the ureter, if rough and angular, or unfavourably situated, may so irritate the parts as to make them contract and hinder its passage. This contraction I call a spasm, by which the stone is griped and held the straiter the more it is pressed forward.

The same thing may happen in any part of the ureter, especially where the passage is straitened; as at its entry into the bladder, or even in the bladder itself; and that from a very small stone, provided it be angular and falls upon the neck of the bladder, so as to stimulate and make the sphincter contract. In this case, the more the patient endeavours to force away his urine, the less he is able to do it, and the spasm and pain are the greater. But a catheter will easily push back the stone into the bladder, and the patient is immediately relieved.

But this cure cannot be applied to a stone in the ureter. Here the indication is to take off the spasm of the parts, which might be done, if we could change the situation of the stone by a vomit, or any other violent motion: but as that is not very practicable, the best method is to try a *femicupium*, and a draught with forty or fifty drops of *liquid laudanum*; for the ordinary dose of twenty drops will rather do harm. A *femicupium* commonly gives ease while the patient is in the bath, but no longer; but a great dose of *laudanum*, if it makes the patient sleep, takes off the spasm, gives time for accumulating as much urine as will dilate the ureter, and thereby changes the unfavourable position of the stone before the patient awakes. They who are afraid to give a large dose of *laudanum* may give it by degrees, till it cause sleep; but they may begin safely with forty drops to an adult. Bleeding till the patient faint will also take off the present spasm.

SECTION XXXI.

*Of the effects of opium in the lethargy, and other
sleepy diseases.*

THIS is a class of diseases where I think opium has not been tried; and therefore when I say it does harm in such cases, I do not speak from experience, but conclude from analogy, that immoderate sleeping does not require medicines that force sleep; and that a drug which stupifies the brain and nerves, will not be good for a præternatural *stupor* or insensibility. In this class I take in the apoplexy, lethargy, carus, palsy, giddiness, water in the head, and such like; in all which I think opium as improper as a full bumper to a man that is drunk.

SECTION XXXII.

Of the effects of opium in the asthma senile.

Asthmatic old men are sensibly the worse for using opium. It makes them breath with more difficulty, and complain of a tightness across the breast; which is no wonder, because at that time of life they abound with phlegm, which grows more thick and viscid as they grow older; and they find that opium renders their phlegm still more viscid and thick, which is its common effect; nay, it is even dangerous to old men in a catarrh.

SECTION XXXIII.

*Of the effects of opium in the peripneumonia
notha of old men.*

MOREOVER, if an old man is seized with a *peripneumonia notha*, opium is a dangerous remedy. Repeated blisters and frequent small bleedings, with sweet oranges, *i. e.* the reverse of opium, is the cure.

I think old men in a *peripneumonia notha* bear bleeding extremely well, and far better than any unexperienced practitioner would believe. One indeed would naturally imagine, that old men had little blood to spare, and on that account might be apt to omit venesection even in this disease; but in so doing we should omit the principal means of cure.

Again, if we judge by the pulse of an old man in this disease, nothing is more indicated than to let blood, and omit opium and every thing that heats or rarifies the blood; for the pulse at this time is as full and as strong in a man of fourscore, as it is wont to be in the pleurisy of a vigorous young man. Add
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to this, that the more the pulse swells, the greater is the danger; and the stronger it is, the less strength they have. The first old person I had seen in this disease, had an intermission in her pulse, with great weakness and difficulty of breathing. I thought such weakness required a cordial, therefore I gave plenty of spirit of hartshorn in a julep with gum ammoniac. This made the pulse regular, tho' more quick and strong. I was vain of my success, yet the lady was less pleased: she found herself more sick, and more oppressed, when I thought her pulse stronger and more regular. The next day she declared positively against taking any more medicine; and I left her unwillingly to fall a sacrifice to the stubbornness of her own temper. She abstained from every thing, except water-gruel and new butter-milk, by which means she recovered.

A man of eighty-four was twice blooded in this disease, and eat strawberries instead of squill-pills, and recovered. Were it my purpose to treat of this disease, I could give many instances to illustrate this maxim, *viz.* That the cure of the *peripneumonia notha* in old

men requires the same cure with the pleurisy in young ones; that is, evacuations and a cool regimen: and I conclude, that whatever disease requires evacuations and cooling, will disagree with opium. But I would not depend upon this conclusion, if I could not likewise say from experience, that opium is in fact dangerous in this disease; for tho' I have said in general, that those diseases which require the cool method and evacuations, disagree with opium and cordials; yet there are exceptions, which I shall mention afterwards.

I have advanced that opium is not good for an asthma, but if it be of that kind which is occasioned by a catarrh, it is then a good remedy; and is the principal ingredient of the *elixir-paregoricum*, in the new London dispensatory. This elixir I make use of with success, at any time when I have got a recent cough, to which I am very subject, from slight causes: but this is not properly what is called an asthma; it is a catarrh, that does indeed stuff the lungs and hinder breathing, by a plentiful secretion of rheum in the branches of the *trachea*, which you must not increase by squills, vinegar,

gar, and emolient tinctures, for the more you endeavour to expectorate it, the more you bring in its place; neither must you stop this flux of rheum in the lungs by opium: both extremes are dangerous, and small doses of opium repeated cautiously, till you find the effect, is the middle and the safest way. I have erred both ways: I have had a flux of rheum that made me cough and spit incessantly, with a sensation of weight and obstruction in the breast. Lintseed-tea, and pectoral decoctions or linctuses, increase this asthma, and moderate doses of opium cure it. In such cases I am fully persuaded, that the pargoric elixir will deserve the praises which Quincy bestows upon it. The passages through which the phlegm which I discharged comes into the wind pipe, are without doubt preternaturally dilated, otherwise such a quantity of viscid matter could not pass in so short a time. After opium I cough and spit less, but find that what I expectorate is thicker, more yellow, and comes up freer; *i. e.* it is better concocted. I imagine, that by the structure of my lungs, I am naturally disposed to this kind of catarrh; and that

that the above passages are easily dilated by a slight cold, which probably suppresses the perspiration, and produces a fluxion on the part that is most susceptible of it, and best adapted for such a discharge. I will not pretend to determine, whether this dilatation is owing to a lax structure of the parts, which is natural to me, or whether it is an effect of the frequent catarrhs, to which I have been long subject, and which may have gradually dilated the parts affected, as repeated fluxions usually do; but I have remarked, that this cough has been troublesome to me and my nearest relations, for many years, except in the summer months when I am free from it; tho' I find that the older I grow, this interval is shorter, and what I spit up is more yellow.

It may not be amiss in this place to take notice of the uselessness of that *farrago* of pectorals, with which many in my condition are fatiated to no purpose; and likewise to take notice how often the yellow *mucus* spit up by such is mistaken for *pus*; and particularly, that when such patients die, they are very commonly thought to have died with ulcerated lungs,

lungs, even tho' they are opened after death, and no ulcer appears.

What deceives the surgeons is, that in opening the lungs they find purulent-like matter every where in the branches of the *trachea*, tho' in fact there is no real *pus*, ulcer, or abscess. This mistake must lessen the credit of Bonetus's collection of such cases, in his *sepulchretum anatomicum*.

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SECTION XXXIV.

Of the effects of opium in internal inflammations.

IT is certainly a good general rule, that opium does harm in all internal inflammations, such as the *phrenitis*, *pleuritis angina*, *peripneumonia vera*, and *notha*, *hepatitis*, inflammation of the stomach, intestines, or any other internal part. This I think is a fact which I have had the misfortune to learn from too frequent experience, and is not only agreeable to our theory of opium, and of the diseases above mentioned; but to the opinion and practice of every physician that I have had opportunities of consulting on this subject.

According to our theory of opium, it fills and distends the capillaries, and at the same time heats and dries the skin; for altho' large doses of opium usually prove sudorific, yet when it is given in small quantities, it heats and dries the skin, as moderate drinking of spirits, strong drink, or volatile salts do: but if you increase the doses of opium, brandy, strong drink, or volatile salts, they all become
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sudorific; *i. e.* they produce a short temporary fever, whose natural crisis is a sweat. Opium likewise dries the *fauces* and tongue; it makes the fibres more stiff, the glandular secretions more thick, viscid, and more slowly excreted: and doubtless, if it produces these effects in a healthy state, it cannot fail of being prejudicial in internal inflammations.

Altho' I have condemned the use of opium in inflammations, yet I would not have it inferred, that every small dose will have a sensibly bad effect, especially when the inflammation is not considerable. I think that in very great inflammations, opium evidently does harm; and therefore I presume, that it may be proportionally hurtful in slighter inflammations, even tho' we do not perceive it. I have observed, that in considerable inflammations opium will not easily procure sleep, and what it does procure is hurtful; but it is also certain, that in those inflammatory diseases, even natural sleep is sure to make the patient worse than he was before its coming on: not that sleeping is a bad sign in such inward inflammations; but, on the contrary, it is a sign that the disease is milder than when
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the patient could not sleep. In all inflammations there is a distention and obstruction, which is increased by sleep, whether natural or caused by opium; and in mortal inflammations the patient wishes to be kept awake, rather than have such disturbed rest, or such frightful images as his short slumbers present him with.

If he is quite wore out with watching, and yet says he is more miserable if he falls asleep, it seldom fails to be a mortal sign in what ever disease it occurs, if the time of its crisis is already past. Hippocrates says, if sleep distress a patient much, it is a mortal sign; and *vice versa*. I have seen many exceptions to this maxim, yet I think it true, if the inflammation is past its crisis. As a further confirmation of this doctrine we may observe, that a wound is more hot, more swelled, and more inflamed after sleep: also a stump after amputation, if the patient falls asleep, is apter to start and burst the vessels than it would have been if he had continued awake. A rheumatic patient often thinks his pain abated till he begins to sleep, and then he awakes with a violent starting, and the pain is increased,

creased, or a new one is felt in some other part. How many patients in other diseases are worse in the night than in the day, only because they either slumber, or are disposed to it? And many people in health find themselves more disordered, both in body and mind, when newly awake, than at any other time. I experience this most sensibly myself every morning, till I have been out of bed for some time; and I think it probable, that this is most perceptible in old men and phlegmatic constitutions: because sleep gives a *remora* to the serous juices in our capillaries, and at the same time increases the internal heat. I own there are many exceptions, and perhaps such as are not easily accounted for: thus in the gout, the pain is often most violent before sleep, and we are easier throughout the day, till the evening comes on, when the pain becomes more violent.

SECTION XXXV.

Of the effects of opium in the small-pox.

SYDENHAM extols opium in the small-pox above all other medicines, and perhaps justly; but the very reason why opium is proper in the small-pox would be an objection to its use in other fevers and inflammations.

I have condemned the use of opium in all internal inflammations, because it promotes their further progress, and consequently may bring on a suppuration in those parts, from whence the *pus* can have no exit, and must therefore prove mortal: thus, suppose any part within the abdomen or thorax is inflamed, all our art should be employed to prevent a suppuration, and opium should be avoided as poison; but in the small-pox, a suppuration on the skin is the only way by which this disease can be cured, to which opium may often contribute, both as it promotes the suppuration, and as it expells noxious humours to the extremities and surface of the body.

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When opium promotes the inflammation and suppuration on the skin, it so far co-operates with nature in perfecting the crisis of the disease; and this it does most sensibly when the fever is mild: but tho' I have been charmed with the success of opium where the operations of nature seemed too sluggish, I have been miserably disappointed when the inflammation and fever were already too great. I have at other times thought nature wore out with want of sleep and food, with a constant pain upon the whole surface of the body, and the *vis vitæ* failing, when one dose of opium turned the scale and saved the sinking patient. Perhaps any other cordial would have done the same: Morton was of that opinion, and therefore extolled the use of cordials in the small-pox; and they are often the best cure, if we know the proper seasons when they ought to be given; otherwise they are very dangerous remedies

I am convinced, that sometimes in the small-pox opium does much good, and often saves the patient's life; tho' at other times it is no less hurtful, and may even prove mortal: and it is also probable, that thousands

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have used it without being sensibly either better or worse.

If I could tell distinctly, and with certainty, when opium will do good and when not in the small-pox, it would be a discovery of great benefit to mankind, particularly in the treatment of children; and not only in this disease, but in other fevers where there is any analogy.

In general, I think opium is and must be prejudicial, when the fever is too great; *i. e.* where the circulation is too strong and too quick, when the fluids are all rarified and the solids tense, when the capillaries are all distended and the juices inspissated, while the febrile ferment is gradually increasing and the tension on the skin obstructs perspiration. There is scarcely any disease in which we can see with our eyes so many external signs of the *vis vitæ* sinking, as in a fatal small-pox. We may clearly discern, that the blood does not then reach the outward skin, that the liquors in the capillaries retire into the larger vessels; the pustules are no longer tense and full, but shrivelled or dimpled at the top; their interstices become pale; the swelling of
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the hands, face, and salivary glands subside; the salivation is stopped, and the skin itches from the perspiration's being obstructed: all which effects are produced by the weakness of the circulation. At the same time the liquors that did swell the face, fauces, and pustules seem to have retired into the blood, or else their rarefaction has ceased; tho' if a full pock becomes dimpled at the top, I rather suspect that it is owing to absorption.

If these are symptoms of the *vis vitæ* failing, nothing is more certain than that opium will often restore it for a time; for it raises the swelling, fills the pock, and restores the colour and spitting. And it is no wonder it should produce those effects, since even in health it always tends to swell the face and fauces, and to accumulate and thicken the *saliva*; but it is more apt to do this in the small-pox, and especially if the *vis vitæ* has been impaired by a preceding *diarrhæa*.

There are two kinds of sore throats in the end of the small-pox; in both the patients are hoarse, and swallow with difficulty; but one of them is attended with a considerable swelling, stiffness, pain, and viscid defluxion,

a rattling in the throat, with all the signs of a local *plethora*. Opium increases all those symptoms, even to suffocation; and the patients die peripneumonic. Blistering, bleeding, and Friend's method of cure by purging, are usually successful, if applied in time.

In the other kind, where there is no swelling, opium is the best medicine; but if upon looking into the throat, which is easily done in this, tho' not in the other kind, you see the *uvula* and the neighbouring parts pale and shrivelled, and this be attended with a low voice, or rather a whisper, the patient will die; tho' for a while restored by opium as a palliative.

Opium has some advantages beyond other cordials, *viz.* when the patient is quite harassed with a stiffness, heat, and pain of the skin, it procures immediate ease, which no other medicine can do, and at the same time disposes them to sleep.

As for other cordials, tho' they are often very proper on some accounts, they are hurtful on others. Thus when the sick, in the decline of any acute disease, is low and most exhausted, and seems most to want wine; yet at such times he can least bear it, as it
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soon turns sour upon the stomach, and gives the heart-burn: this appears from the acid eructations. Now whatever cordial has such an effect, it must be pernicious: I have often been surprized to find what restless nights have proceeded from so slight a cause; which I should not have suspected, had not the sick person vomited the sour hot stuff in the morning, and been much relieved thereby. I am therefore convinced, that numbers suffer more or less by unseasonable cordials in acute diseases; for as nothing is more certain, than that nature, when exhausted, stands in need of some support; there is no prejudice more common than that cordials are necessary for this purpose, and the stronger they are, the more efficacious: without considering, that plain water is often the best cordial, and not liable to turn sour; so that in fact the weakest cordial will sometimes prove the best. I have observed, that when my patients have been very much depressed with languor in the end of a fever, wine gave them no relief, much less if warm: water was found a better cordial, especially when cold; but a sweet orange was found still more reviving, as it gave re-

lief, whilst but yet in the mouth. I once attended a gentlewoman, whom I thought at the point of death, in the advanced state of a low or nervous fever, with a pulse scarcely to be felt, and speechless; so that there was no place for any medicine but a cordial; but before one could be procured, I put her hands in cold water, which so revived her, that she recovered her speech, and told us how refreshing the cold water had been to her; nevertheless, it was remarkable that she could not bear the coldness of the water long.

I have insisted the longer upon this subject, as young practitioners are so apt to be misled by the term *cordial*; and, therefore, to prescribe castor, aromatics, and volatile salts, even to those who need nothing so much as chalk and cold water. Great numbers suffer by castor and salts, though, in many cases, they may be the best cordials.

When I come off a journey, faint and fatigued, and drink a glass of wine, it becomes sour, and I am worse for it; but if I wait a while, or drink tea instead of wine, I am always refreshed.

I observed, that opium restores the *vis vitæ*, that such a medicine is often wanted about the crisis of the small-pox, and that the defect of the *vis vitæ* is visible in this distemper from external signs. But it may be necessary to distinguish betwixt nature exhausted by evacuations, and nature oppressed by a load of putrid humours. In the last case, opium is certainly pernicious, unless after proper evacuations; but in the first, opium is the principal indication of cure.

After the compleat maturation of the small-pox, I have seen the disease terminate in a *phrenitis*, *angina* or peripneumony; in which cases, opium would certainly be extremely dangerous. And I have often seen children die of the small-pox with the above-mentioned symptoms, when the saliva has been so viscid, that it could not be brought out of the mouth. In all such cases, as well as in ardent fevers, opium is pernicious, even though the *vis vitæ* fails; for nature is already overcharged with accumulated and rarified putrid humours. which opium neither corrects nor evacuates. Here a cordial adds fuel to the flame. Moreover, we find, that

Sydenham was successful in some desperate cases, when omitting opium he used a contrary method, and made the children be exposed to the cool air, to drink cooling liquors acidulated with spirit of vitriol, and sometimes be blooded. And how remarkably, says Friend, have some in the small-pox been rescued from the jaws of death, by a brisk dose of physic, after being costive throughout the disease? whereby a load of putrefaction was discharged. If putrid steams offend, then purging must relieve. Had they taken opium instead of this cathartic, the consequence must have been fatal; and I very much suspect, that Sydenham's panegyric upon opium has misled many into blunders, for want of proper distinctions and exceptions.

The sum of Sydenham's doctrine is, that the cool regimen saves the patient, and the contrary kills. I have observed, in general, that opium is improper, where the cool regimen is necessary; but the one is often necessary in the beginning, and the other in the end of the same disease. In the small-pox, opium removes, for the time, many trouble-

troublesome symptoms, and thereby acquires great praise: thus, it abates for a time, the itching on the skin, it restores the lost colour and swelling of the face, even in a dying person; but soon after, the swelling subsides, and the red colour leaves the interstices for ever: even a beginning *jactatio*, though a fatal symptom, is sometimes, for a while, abated thereby.

From the preceding hints, as well as daily experience, it is probable, that opium may be safely prescribed in the small-pox with a mild fever, and that it may be useful in promoting suppuration, when the *vis vitæ* fails, and that it may likewise recruit the strength, by giving some intervals of ease, when the patient has been long fatigued with pain; but that in many cases, it may, or may not, be given, and in others may do harm, even when there is no suspicion of its having done so. When all the humours of the body are tending to a state of putrefaction, when the vessels are full, and all the fibres tense, and the perspiration stopt, where one bleeding, a clyster, or a purge would give the greatest relief, there opium is as bad as poison.

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Sydenham has observed, that, when there is a vast load of confluent pustules, attended with a violent fever, thousands have been killed by stopping the diarrhoea, which is common in the confluent small-pox of children; *i. e.* that thousands have been killed by opium, for I make no distinction betwixt it and the syrup of poppies. In general, I suspect, that opium must do harm in all athletic constitutions, or where the *vis vitæ* is strong and the disease near its *acme*. At that time, I would always consider it as an edged tool, and, therefore, for further security, if it be then necessary, would advise bleeding at the same time. After the supuration is compleated, removing the *putredo* and supporting the *vis vitæ*, are of equal importance, and require proper evacuations, fresh air, and mild subacidulated liquors, with opium and the peruvian bark.

After all, I must own, that there are many exceptions to these general rules, concerning the use of opium in the small-pox, but it would be beyond my purpose to descend to particulars.

SECTION XXXVI.

Of the effects of opium in the measles.

I Shall have the less to observe on the use of opium in the measles, because much of what I have said, concerning its use in the small-pox, will be applicable to this disease, as well as to many other dangerous fevers; but there is one symptom in the measles, which is as inseparable as the eruption itself, (I mean the dry tickling cough) for which opium is an excellent medicine, though only a palliative; indeed a palliative is all that can be required, because this symptom is not to be cured 'till the measles are gone: it may, and ought to be abated, and opium, bleeding and blistering are the only means worth the trying, that I know of. Opium gives comfortable intervals betwixt the fits of coughing, and nothing else is necessary when the disease is mild. In the year 1750, I seldom gave any thing else; sometimes this cough is so mild as to need no cure, but at other times,
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the patient says, he is shaken to pieces by it. I have seen some so spent with the constant fatigue, that the eruption has turned pale before the due time, and nature has began to yield to the disease, when one dose of opium has changed all for the better in an hour's time. It has dispelled the pains or stitches, called back the eruption to the skin, and the lost lustre to the eyes, the faint voice has recovered its tone, and the fond mother her hopes again. Although opium is the best cure for those symptoms, which are brought on simply by the constant shaking of the cough, yet, if the fever is threatening or the patient plethorick, or opium has been tried without success, it will be then very dangerous; so dangerous, that I never attempt to conquer this cough by strong doses, if the mild ones prove useless; I have immediate recourse to bleeding and blistering to prevent a peripneumony: a large dose of opium might bring on that inflammation, which we should guard against with the utmost care. For which reason, if there is a suspicion of danger in the end of the measles, and the cough is urgent, I always would let
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blood before I give the opium. I have often suspected, that opium binds the breast, for which reason I first prescribed pectorals before I gave opium; and upon trial, though I think they don't make the cough less frequent, yet those of the emollient kind make the cough more easy, when the fever is gone, and the stiffness and foreness of the breast remain; but while the fever continues, what abates that, is the best pectoral. Blood-
ing and blisters are then indicated, and afterwards asses-milk, as a restorative.

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SECTION XXXVII.

Of the effects of opium in a salivation.

IF one has got cold in a salivation, a diarrhoea with gripes, or pains throughout the body, or perhaps a vomiting succeeds, and commonly the symptoms being violent, require a speedy cure. Opium, with a full glass of warm wine and spices, is the best cure. We may give thirty drops of *liquid laudanum* for a dose, and cover the patient up very warm in bed, to provoke a sweat; as the sweat comes on, the symptoms begin to abate, and soon after altogether disappear.

This vomiting and purging in a salivation are not always the effects of cold; sometimes they are brought on by eating or drinking food that is improper, or in too great a quantity. In this case, a vomit is necessary, and opium hurtful.

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SECTION XXXVIII.

Of the effects of opium in fevers.

I Have already considered the effects of opium in some fevers, attended with considerable inflammation, such as the pleurisy, peripneumony, &c. it may, therefore, be expected, that I should take notice of its use in other continued fevers; but fevers being of a very complex nature, and very different one from another, no general rules can be laid down relating to them.

Whoever attends to the different kinds of fevers; their different stages, the variety of constitutions, climates and other circumstances of consequence in the cure, will be convinced how difficult it must be to determine the effects of opiates in such cases. Little can be said in general, and, therefore, I shall mention a few of its particular effects.

In very bad fevers, the patient often gets no rest, and, therefore, calls for opium; the effect of it is, perhaps, to force a very troublesome,

blesome, unrefreshing short sleep, out of which he wakes either with a violent start; or in great disorder from a terrifying dream, wishing that he could be kept awake, rather than sleep under such circumstances. Opium, with such effects, must be pernicious in any disease, but still more so in a fever. In other diseases, a small dose of opium may bring on these disagreeable symptoms, which a large one would overpower, while it procured a comfortable sleep. But still I suspect, that even this large dose will confirm and rivet the disease.

Mr. G. G. of a full habit of body, had a fever, with a pain in his head, and no rest; he desired me to prescribe opium, but I refused it, lest it should increase the pain of the head, and, perhaps, bring on a delirium: next night, he again called earnestly for opium, but his wife would not consent to it, because she was afraid of the above consequences; however, by the advice of somebody else, she was prevailed on to give him the syrup of poppies, which she reckoned safe enough, because it was given to children: that very night he became delirious,
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and never grew better, but he died in a few days.

Hitherto, I have represented opium as a medicine apt to heat, rarefy the blood, and increase obstructions, and, in general, to augment all the common symptoms of a fever. But, on the other hand, however absurd it may appear at first sight, to say that a fever may be cured by increasing its force; yet they, who recommend cordials in a fever, must imply no less. Wherefore, though opium excites the heat, drought and other febrile symptoms, and proves often fatal in inflammations,; yet it is no less certain, that it has frequently saved many lives in the small-pox, measles, and that feverish disorder which we have called a weed. So that if it does promote the feverish symptoms, yet, otherwise, its good overbalances its bad effects. I have often observed about the crisis, that when one has been quite reduced by the long continuance of the fever, attended with watching, pains and repeated evacuations, great benefit has arisen from an anodyne and cordial draught. For the sick are often in the same condition at the

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crisis of fevers, as in the decline of the small-pox or measles, when the *vis vitæ* fails too soon, and the eruption suddenly disappears. In such cases, I observed, that opium was an excellent medicine, nor will it be less useful here, if seasonably given.

About the *acme* of a fever, the *vis vitæ* often fails before the crisis is compleat, that is, before a due coction can be brought about. For every critical evacuation requires, that the humour to be discharged, be first prepared to pass the secretory vessels: this previous preparation, I call coction, which is the work of nature and the effect of the animal process, which endeavours to expel whatever is noxious or superfluous. But if nature sinks, before coction and critical evacuation can be accomplished, the strength must be supported by opium and other cordials.

The *vis vitæ* and *vis morbi* are sometimes so equally ballanced, that one dose of opium will save the patient, when bleeding would be fatal. I am persuaded, that opium, and even other cordials, have frequently had this good effect in the small-pox and measles;
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and, that upon such facts, Sydenham has entertained so good an opinion of it; and that Morton, for the like reasons, was as much prejudiced in favour of cordial juleps. It was from Sydenham's commendation of opium in the small-pox, that I took the hint of using it about the crisis of other fevers.

To conclude, opium is useful in promoting the crisis of fevers, when the *vis vite* fails, or in weeds and short fevers proceeding from cold, provided it be given 'ere the humours are much vitiated; but, on the other hand, if it be given too late in the last cases, or at the beginning of a continued malignant fever, when it is mistaken for an *ephemera*, opium is then prejudicial, and sometimes fatal. I have not tried it often, but I should expect little or no advantage from its use, where all the fluids are in a præternatural state, or very much corrupted, especially as the head is commonly so much affected, that the patient knows nothing of what passes. I think opium succeeds often, where wine, or such-like cordials, are useful; but with this advantage, it does

not turn sour. I cannot omit one observation, that serves to confirm what I have said of opium, *viz.* that many times the crisis has been brought on with wine, when the patient seemed expiring; at other times, the common cordials, epithems to the head and stomach, also warm irons or live pigeons applied to the soles of the feet, have recovered some, when almost at the last extremity, by giving new force to the circulation, when almost at a stand; whereas opium does not seem very fit for this purpose, for it is not a proper cordial, where the patient is insensible or delirious; yet, I know none better, when he is exhausted and too sensible of the fatigue he has undergone, or when there is a delirium with a slow pulse.

It may not be an useless digression, to give one instance of a delirium suddenly cured by opium. It was in a person, who was so far recovered of a peripneumony, as to be quite free of the fever; she had been very much exhausted by abstinence, evacuations and the disease, and continued to cough up a great quantity of greenish *mucus*; 'till one

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day, sitting up too long, she caught cold; and the spitting entirely left her; at which, I was not a little alarmed, and because she complained of great debility, and of that kind of weariness and languor, which opium often cures, I ordered her immediately twenty-five drops of *liquid laudanum*: but before she could take it, she became delirious; so that I thought it now contrary to my theory to give it, suspecting a *metastasis* from the branches of the *trachea* to the brain. Upon examining her pulse attentively, I found it slower than in health; her skin was also cooler, and her looks extremely languid: wherefore, I ventured to give her the opiate. She slept six hours and awoke quite free from the delirium. After this, the opiate was repeated every night, and she recovered without a relapse, and without a return of the spitting. It seems probable, by the sudden stopping of expectoration, and its not returning, that the matter was re-absorbed and assimilated, and that the delirium was a kind of *vacillatio* in the efforts of nature, brought on by the *metastasis* of what formerly was expectorated. This *vacillatio* was evidently

cured, upon restoring the *vis vitæ*, by a sound sleep. If a purging clyster had been prescribed at this time to make a revulsion from the head, it might have proved fatal, by diminishing the *vis vitæ*, and leaving the brain unsupplied with proper juices, through a defect in the force of the circulation.

This instance of a delirium cured with opium, was the first case of that kind wherein I had ventured to prescribe it, except in the small-pox. I soon after had a patient in a low continued fever, who, about the fourteenth day, had a longing for orange-wine, when she was scarcely able to tell us so; she was indulged in the use of it as a cordial, tho' we thought her life very precarious, and drank a pint of it the first night; the next day she was sensibly better, and gradually recovered. It seemed as if nature and the disease were in equilibrio, and that the wine, here given, had cast the ballance. I have heard of a variety of things, which people have been fond of, and have taken with admirable success, about the end of lingering fevers; they were generally cordials, spirituous, stimulating, well seasoned or of a high

high relish. Nevertheless, though I believe a cordial would frequently save the patient's life, if seasonably given, yet it is no less certain that they often do harm, even in the end of fevers, when improperly applied; but opium, and all such heating things, are much more prejudicial in the increment of a fever, however faintish or languid the patient may find himself; and I suspect, that the common boluses of castor and *sal succini* are often given no less unseasonably: I rather mention these boluses, in as much as I myself once thought them a valuable remedy in many fevers, without making any distinction of their different stages, much less did I suspect, that they were hurtful, 'till many of my patients had an uncommon *jaetatio* after taking them, and, at last, took them with such reluctance, that they struggled with their utmost efforts to avoid them, and that, at a time, when I thought they had not sense to know what was offered, nor strength to repel the hand that gave it; some, who were more sensible than the rest, complained that these boluses scalded their stomach; and it is well known, that

what overheats the stomach in a fever, occasions a *jaëctatio* and universal uneasiness. If I am not mistaken in this remark, it is of no little importance, for such boluses are frequently administered by the hands of those who cannot distinguish the proper season, or even don't suspect, that they are at any time hurtful. There are also some who would not allow the sick a single drop of brandy, and yet indulge them freely in the use of compound waters, in their cordial juleps, as if spiced brandy was less heating than when simple, or more diluted in the apothecary's shop than when made into punch. That such as are past recovery, are often the worse for cordial juleps, even at the time when nature seems to stand most in need of a support, is (I think) a fact, which I recommend to the observation of those who have let it hitherto escape their notice.

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SECTION XXXIX.

Of the contrary effects of opium and venesection.

I Have often observed, that opium distends, infarcts, heats and rarefies, so that our fibres are more tense, and our body more swelled after, than before we use it. Bleeding, on the contrary, evacuates, cools and sensibly relaxes. It generally abates the rarefaction of our fluids and tension of our solids; so that opium and bleeding answer indications that are directly contrary. From this view of their different effects, I had established it as a general rule, that opium was improper in all those diseases in which bleeding was necessary; and, I think, it holds good for the most part, and has the concurring testimony of most practical authors to confirm it; in as much as they prescribe bleeding in all kinds of inflammations both external and internal, and almost in all fevers, but especially in the very acute or violent kind, whether they be symptomatic or essential. They prescribe bleeding in all diseases

diseases occasioned by, or attended with, a *plethora* or rarefaction of our fluids. Bleeding is found beneficial, and, therefore, is recommended by every author in the *pleuritis*, *phrenitis*, *angina*, *erysipelas* and most inflammatory fevers; in all which diseases they do not prescribe opium. Again all authors prescribe opium in a diarrhoea, catarrh or dysenteric, and that with a design to stop those evacuations. But this rule, like most others, is not without exceptions; for instance, I both let blood and gave opium freely to a woman in labour, and I give the opium so much the more freely, if I have first let blood, and, *vice versâ*, I take away the more blood, when I intend to give the opium immediately afterwards. This I do with general success, and probably the reason of this success is: women in labour are, in some sort, plethoric about the region of the *uterus*, where all the fibres are on the stretch, and this attended with heat and rarefaction, and sometimes with spasms; all which circumstances are somewhat abated by bleeding; perhaps even the passage for the *fœtus* is made easier by this evacuation, and the fibres
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more dilatable and pliable, and the flooding after delivery will thereby be lessened; so that the change, made by the sudden evacuation of the *uterns*, will now be more gradual and safe after delivery. It is true, that opium seems likely to undo all that bleeding has done, and therein lies the seeming absurdity of using both at the same time; yet, however, absurd this practice may appear, I often find it useful not only in the case just mentioned, but also in a catarrh, in the measles and a cough with a broken rib; in which cases I usually let blood, because I am afterwards to give opium for the cough, that I may abate the *stimulus* without increasing the *plethora*. I must here take notice, that if the *stimulus*, which I would abate, is owing to a *plethora*, either local or universal, opium would be improper. Thus, in any considerable fracture with inflammation or a plethoric constitution, I would not endeavour to abate the pain or starting of the limb by opium, but by venesection and abstinence. The same is to be said, if a rheumatic fever causes violent startings, pains and swelling in any of the joints.

SECTION XL.

Of the preparations of opium.

PERHAPS, it will be expected that I take some notice of the different preparations of opium, and of the several compositions into which it enters. First, as to the different preparations; I know that the extract is commonly preferred to the crude opium, but, I think, the difference betwixt them too minute to deserve our notice; but, if I must make any difference, I would prefer the crude opium, because, I think, the extract has more chances of being adulterated or spoil'd in its preparation.

The syrup of poppies is by some esteemed a safer medicine than opium, especially for children and in nervous complaints; but I much doubt of the truth of this opinion; and whoever shall think that he perceives this difference in his practice, I would have him reflect how many accurate observations would, in cases altogether similar, be necessary to determine the question; let him reflect

flect how various we find the effects of
 simple opium at different times, and on
 different patients; and how many ways we
 may mistake the effects of the disease, or
 some other causes not attended to, for the
 effects of opium, and, *vice versâ*, it will be
 easy to conceive, that opium simply has as
 different effects at different times, as those
 of opium and syrup of poppies when com-
 pared together, which effects are probably
 occasioned by some other circumstance to
 which they did not attend. There are two
 other objections which I have against this
 syrup, *viz.* it easily ferments even in the
 shops, but the shaking it, when carried to
 the patient, or letting it stand for any con-
 siderable time in a warm room, makes it turn
 sour. In the second place, I think it ex-
 tremely difficult to ascertain the just dose of
 a syrup so precisely as I can do a dose of
 opium; for which reason, I never use the
 syrup when I would have a precise quantity
 of the paregoric, but, in its place, I take
liquid laudanum and *syr. simplex*, though
 even the drops of *laudanum* are not equal.
 I likewise keep an uncommon preparation
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of opium, which was highly recommended to me in cases of great hæmorrhages, even though attended with a violent fever. The receipt is as follows : take of clean crude opium half an ounce, beat it and put it into an iron ladle, set it on a slow fire, stirring it with a *spatula*, and moistening it from time to time with strong wine that it may not burn, keep it thus stirring till half the opium is evaporated, take it off the fire, beat it again in a mortar, then, with the strongest vinegar, reduce it to the consistence of an ointment upon a marble stone or in a glass mortar, then dry it, powder it, and keep it in a glass. The dose to begin with, is three or four grains, but I have gradually increased it to ʒi at bed time, and fifteen grains in the morning.

This medicine I thought successful at first, and, therefore, kept it always ready prepared for hæmorrhages ; but I have often been disappointed in the use of it since ; for which reason, I shall bestow no panegyric on it, 'till I can be more particular and more positive about its effects. At present I think, that hæmorrhages ought seldom to be stopt,
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and then the *antimon. crud. cerat.* and the *vitrum antimon. cerat.* are both more effectual than the above preparation of opium; yet, hæmorrhages, continued or increased by a *stimulus*, will be often more effectually abated by opium, any how prepared, than by any other medicine; so that it is, at least, the best palliative, which probably made me mistake the above preparation of opium for a radical cure, though, in reality, it only abated the evacuation, in proportion as it abated the *stimulus*, which occasioned it; and, in fact, I thought that the longer the uterine hæmorrhages were stopt by it, they returned with more violence, and greater quantities of clotted blood came away, as if the opium had done nothing but retained it in the uterus. Extravasated blood in the *uterus*, like other extraneous bodies, provokes it, by its *stimulus*, to expel it, but the opium abates this *stimulus*, so that the blood has time to coagulate, and the patient thinks herself better, 'till the accumulated load and irritation overbalance the anodyne quality of the opium; then the pains return with more violence, 'till the
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cause is expelled with a *nifus*, like child-bearing pains; after which, the flooding stops of itself, though, at that time, I ascribed it to the effect of a larger dose of my specific opium.

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SECTION XLI.

Of the theriaca Andromachi, mithridate, and diascordium.

IN considering the effects of opium, I thought it not improper to look into those receipts wherein this was the principal ingredient, *viz.* the *theriaca Andromachi*, *mithridate* and *diascordium*.

Most of those compositions have been in great reputation, and more especially the *theriaca* has been much esteemed in all ages; yet there are some practitioners of great experience, who own that they never could perceive any sensibly different effects from the use of this composition and that of the *philonium* or *mithridate*. From whence they have concluded, that the effects of them all were to be ascribed to the opium and a few spices. The ingredients of the *theriaca* are so many, and the virtues of some of them, so little known, that, I think, no body will pretend to ascertain what share each simple has

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in the effects produced by the whole together.

Perhaps, it is for this reason that the colleges of physicians have been so scrupulous in reforming this composition, that all their amendments have terminated in giving us another *theriaca*, which they think will serve all the good purposes of the venice treacle, and is not liable to many of those inconveniences, which embarrass the apothecary in making up the latter: but, yet, out of deference to many of our brethren, who may be of a different opinion, they have likewise retained the old original receipt, that every man may be at liberty to make use of which he thinks best. All who know the difficulty of ascertaining the virtues of such simples, as compose the *theriaca* will be easily convinced, that the first inventor of it must have been very deficient in that respect; it is probable, his choice was directed by his theory and prejudices, which would be of a fashion with the philosophy and physiology of those times. It was then a prevailing notion, that simples often contained some noxious, as well as salutiferous qualities, and, therefore, they compounded them with a variety of
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of antidotes corresponding to the different poisons they were supposed to contain; to these, they added other ingredients, to exalt their virtues, and others, as conductors to direct their influence to the head, the heart, the liver, or any part of the body, where it was most necessary. This was the theory of some, and it is not improbable, that the compilers of such prescriptions, as the *theriaca* and *mithridate*, were influenced thereby.

From whence, I should be apt to conclude, that these receipts have not a just title to all that reverence which hitherto has hindered their reformation; especially as there is one reason for altering them; which I think unanswerable, *viz.* that the apothecaries do it daily without telling the physicians, who prescribe them, that they have made any such alteration. Surely, it is more reasonable that such a medicine should be changed by the college of physicians, (since it must be changed) than left to be variously altered by every apothecary, according to his different theories or prejudices, not to mention other motives, by which they may be sometimes influenced. Would any be so

absurd as to alledge, that the *theriaca* thus altered by different apothecaries, and prescribed by different physicians, has still deservedly kept its reputation? or that the effects may be the same, however you vary the composition? it is much more rational to allow, that there can be no great danger in abolishing a *formula* that has seldom been observed, or in reforming a prescription by the authority of the college, which otherwise will be found different in every shop.

The *diascordium* is another composition, wherein opium is a principal article; and as this is likewise loaded with too many ingredients, the same objections, which were urged against the *theriaca* will be also applicable here: the college have considered this, and, without scruple, have given us a new prescription, much better than the former; but still, as the very judicious author of the *Pharmacopœia reformata* observes, they have retained both the tormentil and bistort-roots, though we ought to presume, that, as they are both of the same nature, either of them would serve, as, likewise, *bole* alone would be sufficient without the *terra lemnia*; and

as to the *styrax*, *galbanum* and *dieltamnus creticus*, it is difficult to assign any other reason for continuing them in the prescription, than a reverence for our predecessors.

I have commonly used *diascordium* as a restraining and gentle paregoric, and found that it made the body costive, and disposed the patient to sweat; but I must own, that these purposes are as well, and as often, answered by opium alone; at least, I think it would be extremely difficult, and would require a vast number of experiments, to distinguish the effects of opium from those of *diascordium* in its ordinary dose; indeed, the other ingredients of the *diascordium* must have effects different from those of opium, yet, I never could, from experience, be able to tell what they were, though I have used both medicines very often; and, for this reason, I doubt, if the species, without the opium, according to the new London dispensatory, will be able to maintain a reputation equal to that which the former *diascordium* had acquired. It is remarkable, that, in this prescription, the *semen acetosæ* is prescribed in the same proportion

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portion with the opium, as if it was no less powerful and dangerous. By this means, half a grain of it will rarely be taken in one dose; from which, I should expect so little effect, that I would rather chuse to leave it out of the receipt.

F I N I S.

